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Memorial Addresses.*

DAVID WILLIAMS CHEEVER, A.M., M.D., LL.D.

I.

By George W. Gay, M.D., Boston.

Any eulogy of Dr. Cheever is to be limited only by good taste and discretion. It would be difficult to overestimate his sterling character, his high ideals, his pure motives, his strict integrity and his exceptional service to the profession. His life was replete with wise and efficient activities. For more than half a century he was held in the highest esteem by the leaders in the medical profession, the court of last resort in determining the character and ability of any physician. He has been so prominent in the medical world and for so long a period, that it is difficult for us to realize that we shall see him no more in his usual walks in life, the sick room, the hospital, the medical school and societies and in the community.

Born in Portsmouth, N. H., November 30, 1831, he died in Boston December 27, 1915, having just entered his eighty-fifth year. He was the son of Dr. Charles Augustus and Adeline (Haven) Cheever, and the grandson of Dr. Abijah Cheever of Revolutionary fame. He was prepared for college at home under private tutors and received a thorough drill in the classics, of which he was very fond, and which he continued to read in the original all his life. He entered Harvard College in 1848 and graduated four years later. Among his classmates was the Hon. Joseph H. Choate.

Descended from a long line of intellectual ancestors, born in a professional atmosphere, endowed with a well-balanced mind, a judicial temperament, a clear vision of duty and a devotion to ideals that nothing could discourage, he was peculiarly fitted for his future successful career. He was proud of his lineage and justly so. He came from good old English and Colonial stock, than which there is none better. He was seventh in descent from the Puritan, Ezekiel Cheever, who came from Canterbury in 1637, was the first master of the Boston Latin School, and for seventy years a noted teacher in this vicinity. Dr. Cheever's father and grandfather were accomplished physicians and surgeons for their time and had extensive and varied experiences. With such a lineage and surrounded by such favoring influences, it was but natural that he should follow in the footsteps of his ancestors and enter the medical profession.

Graduating from college in 1852, he spent a year and a half in Europe, then entered the Harvard Medical School, from which he graduated in 1858 in a class of twenty, one-half of whom saw service in the Civil War, among whom was Dr. Cheever. During his pupillage he attended a summer term at the Boylston Medical School, a short-lived but very good school. Some of the teachers later became professors in the Harvard Medical School, among whom were Drs. E. H. Clark, Charles E. Buckingham and H. W. Williams. Evidently the time was not ripe for more than one medical school in this city.

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* Read at a meeting of the Boston Society for Medical Improvement, on April 3, 1916.

The impression seemed to prevail in those days that the internes at the Massachusetts General Hospital, the principal one in this part of the country, received their appointments chiefly through social and family influences. While such may have been, and doubtless was, the fact in many instances, yet it was by no means universal, as is shown by the incumbents. Dr. Cheever very likely shared in the prevailing opinions, for instead of applying at that hospital for the position of house officer, he sought and obtained that of house pupil at the State Hospital at Rainsford Island, where he remained one year before taking his degree and received an excellent training under Dr. Lothrop in medical, surgical, contagious, venereal, children's, and all the diseases found in a large general hospital. There was a maternity department and also a smallpox pavilion. The house pupils prepared and dispensed medicines, made autopsies, dissected and prepared skeletons and had a varied and valuable experience which gave them an unusual preparation for entering general practice.

Dr. Cheever's professional growth was steady and continuous. Soon after his graduation he received the appointment of demonstrator in anatomy at the Harvard Medical School, a position that he held for eight years, thereby laying a firm foundation for his future brilliant career as a surgeon and a teacher. From the demonstratorship he became adjunct professor and then professor of clinical surgery. Later he was appointed professor of surgery, which position he held for ten years, to the great satisfaction of all concerned. He was made professor emeritus in 1893 and Dr. Warren succeeded to the chair in surgery.

In the early years Dr. Cheever did whatever came to hand, as most beginners in our profession are obliged to do. To eke out a small income, he wrote for some of the leading magazines, as the *Atlantic Monthly*, the *North American Review*, and he wrote the Boylston Prize Essay, all of which brought in much-needed money. He served at the Boston Dispensary as surgeon for five years, attended the patients in a smallpox hospital for a year and led a very busy life, if not a very lucrative one; that was to come later. He was a frequent contributor to the medical journals, published a volume of Surgical Lectures of lasting value and interest, and for twenty-five years was the principal editor and instigator of the medical and surgical reports of the Boston City Hospital, reports that he was instrumental in establishing. He served his alma mater for twelve years as overseer, and for an equal length of time was a trustee of the Mt. Auburn Cemetery. While occupying the latter position he became interested in cremation and exerted himself to establish a crematory there. This was accomplished, and he showed his consistency by directing that his body should be disposed of in that way.

When the Boston City Hospital was opened in 1864, Dr. Cheever was appointed visiting surgeon, the youngest on the surgical staff. This position, in conjunction with that of prosector in the school, gave him an unlimited field for the development of his powers. How well he improved his opportunities is now a matter of history. For fifty-two years he was connected with the institution and was the last surviving member of the original surgical staff. During his active career he was a leader in the staff's activities. He inaugurated the surgical clinics; he established or encouraged the Sunday conferences of the visiting surgeons, a most interesting and useful function; he fostered public operating days; attended and took an active part in the clinical meetings of the staff and invited the outside physicians to visit the hospital freely and frequently for the purpose of familiarizing themselves with the work of the institution. In short, he was foremost in every effort to develop the hospital and place it in the front rank of municipal activities. Two novel features of this institution always excited his heartiest commendation; those were, first, the privilege granted by the trustees to the staff to nominate their own colleagues, and second, the competitive examinations of house officers. In his opinion these features conduced very materially to the harmony and efficiency of the staff and the welfare of the hospital.

He always considered that his hospital patients had prior claim upon his time and attention. He could turn his private patients over to an assistant, but, as they had no junior visiting surgeons in those days, he and he alone was responsible for the former class and must do the work. He was appointed for that purpose. The visiting surgeon had from sixty to one hundred patients under his care. He did all the operating and made many of the complicated dressings. Dr. Cheever was especially attentive in his after-care of serious operations, feeling that the results not infrequently depended thereon. Temperamentally he was a caretaker. He showed this trait not only towards his patients and friends, but also to the house officers and the nurses. He looked after their health and comfort, as well as their daily work. His thoughtful consideration won their respect and admiration. It was his invariable custom to treat his charity patients with the same care and consideration that he bestowed in his private practice. The quality of service was alike in both.

His career as a general practitioner was marked by the same broad grasp of the situation and the close attention to details that characterized his surgical work. He was, as before mentioned, a natural-born caretaker, and his interest was by no means limited to the sick. It extended to every one with whom he was brought in close contact. He noticed everything and was ready with suggestions appropriate for the occasion. As might be expected, his patients had unbounded confidence in him, and many became his lifelong friends. He was, indeed, a tower of strength in times of trouble.

As a surgeon Dr. Cheever was safe, enterprising and dependable. Painstaking in arriving at a diagnosis, deliberate and careful in his operations, bold in emergencies, fruitful in resources, thorough in his work and most assiduous in the after-care of his operative cases, he long occupied a foremost rank in this branch of the profession. He did many bold, original or unusual operations that gave him an international reputation. He never forgot patients whom he had treated for a serious illness, or upon whom he had performed an important operation. He kept track of them as long as possible, thereby accumulating a mass of knowledge that was of great service in making him a broad-minded, efficient practitioner and consultant. He was a constant attendant at medical meetings, speaking and presenting papers frequently, a large number of which are to be found in the current medical literature of the time. He believed that papers worthy of presentation to a medical society should be published, and acted upon that principle, to the benefit of the profession and the public.

As a teacher in the medical school Dr. Cheever made a lasting impression upon the thirty-three classes of students that received his instruction. Plain, practical facts formed the basis of his teaching. In his opinion "predigestion, terseness and extemporaneous speaking" were the elements of his success in that work. Realizing the fact that most of his students were to earn their living by caring for the sick and injured, he endeavored to fit them for that task in the best possible manner. He had unbounded respect for facts; less for theories. Above all else, he was practical. Given such and such conditions, what are the proper measures to be taken to correct them, so far as may be? That is the sum and substance of practical instruction in our profession. He heartily approved of the suggestion that the Harvard Medical School should demand and provide a hospital service, as one of the requisites for graduation. It is to be hoped that some such scheme can be established in the near future.

Dr. Cheever was an active factor in the reorganization of the Harvard Medical School in 1871, when the present efficient graded course of instruction and examination was inaugurated. He supported President Eliot loyally in this struggle and lived to see the fruits of the wise movement. It was a great advance in medical education, and the promoters thereof may well be proud of their work.

The doctor was a public-spirited citizen, deeply interested in and thoroughly informed upon current events. Independent in politics, but usually voting with the Republicans, except when he thought they strayed too far from the right course. He did his own thinking, formed his own opinions, had the courage of his convictions and acted in accordance therewith honestly and fearlessly.

Considering the fact that he was never rugged, physically, the amount of work that he was able to accomplish was marvelous. Five feet ten inches in height and weighing one hundred and thirty pounds, pale complexion, subject more or less to dyspepsia, which disappeared at sixty, on giving up meat, he lost little time by reason of ill health, until 1885 when he contracted septicemia (blood poisoning) and was more or less incapacitated for a year. His capacity for work depended in no slight degree upon his serene temperament, his latent endurance, his complete self-control and the careful regulation of his daily life. He never made "coat-tail" visits, but, in accordance with a hint from his friend and teacher, Dr. James Jackson, one of America's wisest physicians, he always removed his overcoat and showed no haste until he was out of the house. No time was wasted, but his patients would not suspect that he had more work than he could easily attend to, or that he was in haste to get away.

Physicians should not have impulses, or, having them, they should not be acted on, until they have been subjected to the alembic of reason. Many a mistake is due to the neglect of this precaution. Dr. Cheever never acted upon impulse. He was a typical example of wise preparedness. It was one of his fundamental principles of life. It was his custom to review the steps of all important operations and to lay out the plan of his lectures the evening before. He never depended upon the inspiration of the occasion for what he should do, or say. So far as posible, he was thoroughly prepared for all emergencies. His foresight and forethought prevented mistakes, inspired confidence and insured favorable results. He was deliberate in forming his opinions, but once formed, they would stand rigid examination.

The doctor took a lively interest in the substitution of the present system of medical examiners for the old and oftentimes disgraceful coroner system, in which medical problems were left for decision to laymen who were paid by the job. Business, rather than justice, seemed the ruling motive in many instances. A flagrant case in which a young and innocent woman, a patient of the doctor's, was disgraced, another honorable physician insulted and humiliated and the family and friends distressed beyond measure was the final straw that roused public indignation and swept the system out of existence in this state.

Our friend was an effective speaker before legislative committees. Calm, deliberate, sensible, his remarks always carried conviction to reasonable persons. They could see at once that he had no axe to grind, but was sincere, fair and unprejudiced. At one time he appeared, as an expert, in court frequently and, while he was an excellent witness for the truth, yet he considered it the most unsatisfactory of all his activities. To quote his own words, "I can almost say that I never left the court after testifying with a feeling of honorable satisfaction, or that I had been allowed to tell the exact truth after complicated questions and having my mouth shut by technicalities." He was an admirable witness for the right side, but he could not be swerved a hair from the truth, as he understood it. Upon the witness stand he was calm, collected, never lost his head nor his temper; simply answered questions in the shortest possible manner, volunteered no remarks or comments and left the impression of unbiased, disinterested evidence.

The doctor firmly believed that in important cases the court should be authorized to summon an expert, as now may be done in this state in criminal cases in which the sanity of the defendant is an issue. At present, medical expert testimony is bought and paid for irrespective of justice and regardless of the oath taken to "tell the truth, the whole truth and nothing but the truth," a resonant fiction sanctioned only by long usage. Cross-examination is supposed by the uninitiated to have for its object the elucidation of the truth, rather than the confusion of the witness and the jury. Dr. Cheever finally refused to accept this sort of service and appeared in court only when legally required to do so.

Dr. Cheever devoted no small portion of his active career to the service of medical charity in private as well as in his hospital practice. He fully appreciated the fact that medical charity is abused in our hospitals and dispensaries, and that thus far the efforts for its correction have been only partly successful. Paternal legislation takes no heed of the doctor who is required to care for the injured who are placed in our public hospitals by the insurance companies, and a movement is now on foot to include the sick in this class. The hospital is paid, the patient is paid, but the doctor gets nothing, although his services are the chief factor in the transaction. As Dr. Cheever has well said, "Hospitals impoverish the doctor and enrich the public. Hospitals benefit the professional knowledge and pick the professional pocket. . . Whom does the abuse of medical charity injure? It breeds pauperism and it robs the doctor." "To adjust the very delicate balance between our duty and our rights, between the abuse of our charity and our right to earn a living, is now a pressing and a daily problem."

Among his numerous charitable activities, Dr. Cheever established a scholarship in the Harvard Medical School for the benefit of deserving first year students, at that time the only one in the institution for that class. He also gave a fund to the Boston City Hospital for the benefit of the graduates of the surgical department of that institution. For many years he was president of the Massachusetts Medical Benevolent Society which furnishes aid to needy physicians and their families. He was a liberal contributor to its funds and retained his interest in the society throughout his professional life. His charities were numerous, and few worthy applicants were refused aid of some sort.

Unlike too many in our profession, the subject of this sketch was an excellent business man, safe, sound and conservative. He realized the fact that the time may come in the life of any one when a dollar will be his best friend. His charges were moderate and in strict accordance with the fee-table in vogue in this vicinity, which he helped to establish. He was prompt in presenting and collecting his bills. His investments were safe and judicious and largely in live real estate in his home city, where it was under his personal observation. Speculation, promotions and "wild cats" had no temptation for him; safety and stability were his guiding principles.

His business operations were conducted upon the same high, ethical plane, as were his professional activities. In his opinion no transaction was really profitable unless it was profitable for both parties. For lasting results there must be reasonable satisfaction on both sides. He took much interest in the up-keep of his properties. For several years he had made it a practice to visit frequently every building that he owned, usually on Sunday, and took pride in calling attention to their excellent condition as regards repairs and hygiene. No liquor was allowed to be sold on his premises under any circumstances, a fact that diminished his income considerably. He was unalterably opposed to the traffic, as he, like every physician, was well aware of the evil results of the abuse of alcohol, and he would have no part in the business even as a landlord.

The professional and financial career of his many students always interested him deeply. He kept track of them so far as possible; his advice and encouragement were always at their service. As he has so truthfully said, "The welfare of my medical brethren has been in my thoughts prominently and permanently. I have tried to advance our profession." In the opinion of the writer, a physician beginning practice with nothing except a debt, who arrives at a stage in his career when he can live on his income without work, has achieved a financial success. Too few in our profession ever reach that situation. Dr. Cheever was fortunate in that respect, as in many others. Although he was eleven years in reaching his carriage, yet he was laying the while a foundation that brooked no reverses and his financial growth was as steady and complete as was his professional development.

Dr. Cheever's devotion to his profession was a precursor of his success. His whole time and strength were given to his work. His motto was, "Difficulty, Struggle, Progress." Beneath that calm, modest exterior was a will of iron and a determination that brooked no defeat. Nothing was permitted to interfere with his professional duties. He was always at the service of his patients and his fellow practitioners. As he has so tersely said: "Whatever success I have won as a doctor has been due to a peculiar quality of my mind, concentration; one thing; only one thing; always one thing. A doctor; only a doctor; always a doctor. One school; one hospital; one pursuit; one profession. That has been my rule and my course." Such was his life-work, as he summed it up, and its results are known of all men.

When Dr. Cheever had passed the zenith of his activities, the writer once asked him if he would choose the same profession again in the light of his experience. After a little hesitation, so characteristic of him, he replied, "I think I should, as I am better adapted for the medical profession than for any other calling." Happy indeed must any one be who can say at the close of a long career that he made no mistake in choosing his vocation.

Dr. Arthur B. Emmons, 2d, in his interesting paper on "The Profession of Medicine," has shown that the graduates of the Harvard Medical School are, as a rule, very well satisfied with their choice of an occupation. In reply to a similar question, 226 replied in the affirmative and only 16 in the negative. At the writer's last interview with the subject of this sketch he spoke of this paper with much interest. It had been read to him and had received his usual careful consideration. He thought that the prospects of the general practitioner were less promising than formerly by reason of the great increase in hospitals, dispensaries, specialists, and the paternal and socialistic trend of present-day legislation. He was not at all misanthropic in his views, and he believed that the situation would work out in the right way in time. It simply remained for us to accommodate ourselves to conditions as they came along. He had unbounded faith in the nobility of his profession.

Dr. Cheever was a forceful advocate of privileged communications between physician and patient and wrote and spoke thereon upon every appropriate occasion. Except in criminal cases, he claimed that the patient's record should be held sacred; that if justice demanded its revelation, it should be given privately before the judge rather than in open court. It may be needless to say that no inconsiderable proportion of the profession agrees with him in that opinion.

The medical defence act of the Massachusetts Medical Society, a species of mutual insurance against blackmail, met with Dr. Cheever's approval. By this act, counsel is furnished to the members, free of charge, in their defence in any fake suit that may be brought for alleged malpractice. In effect it discourages shysters in their efforts to secure hush money from physicians by threatening suits. The act costs less than twelve cents, annually, per capita, and has proven itself beneficial here, as it has done in twenty-four other state medical societies. It has evidently come to stay.

The recreations of our friend were walking, rowing, fishing, horseback-riding and the gymnasium. He was also fond of music and travel. He made several trips to Europe, taking much interest in art, and especially in sculpture. Rome was especially enticing on that account. Scenery upon a large scale had peculiar attractions for him. For twenty-one years his summers were spent in Cohasset upon a bluff overlooking the ocean, giving a view of which he never tired. In his fishing trips it was of little importance to him whether he caught anything or not; it was the open air, the vast expanse of water and sky with their endless changes that appealed to him. The loss of a daughter from drowning, the saddest bereavement of his life, sent the family to a farm in Dedham for the subsequent seasons. Here he took great interest in the various activities about him. His children and grandchildren were a source of never-failing delight to him. Dr. and Mrs. Whitesides' children from Portland, Oregon, spent their summers at Dedham and there was "something doing" all the time. The writer had the pleasure of giving Dr. Cheever his first ride in an automobile. The cold wind and his efforts to save his hat were far more in evidence, than was any enthusiasm over the trip!

While Dr. Cheever was not a religious man in the ordinary acceptation of the term, yet he was deeply reverent. His mind was essentially scientific, and that is usually reverent, less frequently religious. As he so well says, "Research widens the view and breeds reverence, not for myths and legends, but for infinite facts. Knowledge grows always. Medicine has a religion of its own, useful, immediate, daily. With reverence for what it cannot understand, it takes up and pursues its daily tasks with patience and in the love of man, with the hopes for more knowledge, more usefulness, and these are fulfilled in the succeeding generations."

Many years ago, while performing a critical operation upon a woman's neck, the patient suddenly collapsed from an air embolism (air in the veins), and for a few moments was apparently dead. Under appropriate measures she rallied, the operation was completed and the patient was sent to the ward. Turning to us house officers, Dr. Cheever said, "Where was that woman during those few moments, when, to all outward appearances she was dead?" The world has been asking that question ever since time began! Upon another occasion, while enjoying a magnificent view in the Adirondacks, he called his daughter's attention to a beautiful flower growing at their feet, and said, "The Power that makes that flower grow upon this mountain can be trusted. Whatever the future holds is right." That he fully realized the comfort and support to be derived from religion under certain circumstances is shown by the following quotation from his writings: "No one can appreciate or bear warmer testimony to the good influence of the offices of the church on the poor sufferer's mind in preparing him for an operation, or some desperate struggle for life, than the hospital doctor. Calmness and fortitude displace fear; the mind is made up; confidence assured, and this is half the battle. The priest always sides with the doctor. His services are invaluable." A mind of the caliber of Dr. Cheever's could but meditate deeply upon these subjects. He was too wise, too logical and too reverential to doubt for one moment all the attributes of entire trust in a Supreme Being.

Even were this the time and place, the writer could hardly trust himself to trespass upon your time and patience by alluding to any extent to his personal relations with Dr. Cheever, which began in 1864, and terminated only with his life, a period of more than half a century. I saw him first in the front row of seats reserved for physicians in the old operating room in the cupola of the Massachusetts General Hospital. A slender, fair haired, neatly dressed young man with his hand done up in a black silk handkerchief, Dr. Cheever was recovering from a septic wound of the finger. Our acquaintance began in the old dissecting room in North Grove Street; then came a year as house pupil at Rainsford Island under his chum and classmate, Dr. George L. Underwood, next as his house surgeon at the City Hospital, then surgeon to outpatients, on his recommendation, and finally his colleague, as visiting surgeon, to the close of our active professional lives. As an example, an adviser and a friend, he was all that could be desired: faithful, loyal, reliable under all circumstances. Even at our last interview, a few days previous to the onset of his final illness, he gave me valuable advice relating to the curtailing of certain activities, with all the alertness and interest of half a century's duration. Truly, such friendships make life worth the having. One is tempted to linger over these pleasant reminiscences, but memory alone must suffice for the present.

Dr. Cheever was dignified, reserved, even austere in the opinion of those who had only a slight acquaintance, yet those having a closer relation found him most cordial, genial and sociable. He had a keen sense of humor and was quick to see the inconsistencies of people. He was kindly in his criticism, lenient in his judgment of human frailties, but not of crime or brutality. Justice was a cardinal principle with him, and he believed in human responsibility. The writer has permission to quote the following tribute to Dr. Cheever's character from a personal letter from Dr. Henry P. Walcott: "Dr. Cheever has always represented to my mind the best example of a model for our profession; he appeared so to me when I first came in contact with him as prosector in the school, and when he rose to his high eminence, he lost none of his high leadership. We are too apt, I think, to complain of a dengeneracy in our people, and whatever our failings may be, and I know that they are many, yet I think of no man who at any time better represents the strong characteristic of our race than did he. It adds to our confidence in the future that we have had such a man in our day."

While we may not intrude too much upon the home life of Dr. Cheever, yet we may be permitted to note the fact that it was all that could be desired. Unselfish, kindly, just, full of tender consideration for each and all, he was an ideal husband, father, companion. His married life of over fifty-five years is a blessed memory in the household. His chief pleasure was found in the family, and always to be shared with its members. He was essentially domestic. While he took keen enjoyment in the companionship of patients and friends, yet the home life was the principal refuge for rest and comfort.

Fortunate, indeed, was Dr. Cheever in having a son who, in every respect, is worthy of the name and who, as a member of the surgical staff of the Peter Bent Brigham Hospital, will sustain the enviable reputation of his ancestors. His three sons were a source of great satisfaction to the grandfather, not only for their personalities, but for the fact that they will carry the name on to future generations. While Dr. Cheever naturally regretted the absence of his son during his last illness, yet it was not unexpected, or unprovided for. He urged him to take the position as head of the Second Harvard Unit for service in the hospitals in France, realizing that he might never see him again. He regarded this action of his son as his final contribution to the great struggle for humanity now being waged in Europe. He often spoke of his gratification in the fact that a representative of his family was "doing his bit" in relieving the sufferings of the soldiers in France.

The increasing disability incident to his age was a sore trial to Dr. Cheever, who had been so active, but he bore it in silence and preserved his usual calm exterior to the last. For three or four years he had been unable to do much reading by reason of cataracts, and was, therefore, obliged to depend upon his secretary or some member of the family to supply the deficiency. He had also been warned by certain symptoms that his heart was not doing its work with its usual efficiency. He was advised to lay aside his favorite corncob pipe. Notwithstanding these infirmities, however, he was able to be out and about until near the end of his life. His last days were reasonably free from suffering.

About a week before his death he was attacked with the "old man's friend," pleuropneumonia, and went to bed for the last time. He received the most attentive and skilful care of Dr. Henry Jackson, the son of his old teacher and friend, Dr. J. B. S. Jackson, for whom he always entertained the highest esteem, not only for his mental acumen, but also for his kind heart and strict integrity; a fine type of the old school physician.

Dr. Cheever conferred freely with his physician from day to day as to his condition, fully realizing the situation and accepting it calmly and philosophically, as we should expect him to do. His habitual consideration for the welfare of others never failed him. A couple of hours before he passed away he said to his daughter, "How is your mother bearing up under this? I don't want you to leave her today." Although very weak, he then drew a check for prospective expenses and told his daughter to open the safe where she would find the pay envelopes for all the family employees properly sealed and labelled. "Pay those bills and come back and tell me when it is done." Soon after being told that his instructions had been carried out and realizing that he had attended to every possible detail, he closed his eyes in his last sleep, and all was over. In the language of his physician, "he died a king." He was Dr. Cheever to the last moment of his life; complete master of himself and of all his faculties. He died, as he had lived, quietly, bravely and thoughtful of others to the last. It was consistent with his life. It was ideal.

Few lives of eighty-four years are so sensible, so replete with good work, so completely under control, so well rounded out in all the essentials of true manhood, as was Dr. Cheever's. His sterling character, his high ideals, his strict integrity, his keen intellect, his sound judgment, his devotion to duty and his loyalty to his profession, all justify our highest appreciation. His career may well serve as an example, an inspiration to future generations of physicians.

Well done, good and faithful servant. You have fought the good fight; you have finished the course; you have solved the great mystery of the hereafter. We shall never see your like again, but your life's work will be admired and your memory will be revered by those who appreciate high character, noble service and all the sterling attributes that make for the development of the finest type of men, the upright citizen, the honorable, dependable physician.

II.

By J. Collins Warren, M.D., Boston.

My earliest recollections of Dr. Cheever date back to a period long before I had even thought of studying medicine. My father had gone to Portsmouth, N. H., to see a case in consultation with the elder Cheever and had taken me with him. While the two surgeons were absent on their professional duties, I, a boy ten years of age, was entrusted to the care of the son, a young man who had just returned from Harvard where he had recently graduated. I can still recall distinctly the impression made upon me at that time. A tall and slender youth with quiet and sympathetic demeanor, he was conscientiously carrying out his father's orders to entertain the child in a suitable manner, in which effort he was eminently successful. Although no special exertions were manifest on his part to make himself agreeable, the time passed for me only too rapidly.

On the return of the doctors, the dutiful son was asked to array himself in a costume, in which he was to appear that evening at some social or public function. Young David disappeared and soon returned in the dress of a youthful Puritan. There still stands before me in my mind's eye the figure of a grave and dignified young graduate, fresh from four years of college life, the centre of an admiring circle amiably adapting himself once more to old family surroundings.

Since the curtain of memory first slowly fell on this little episode, the recollection of it has frequently come back to me in later years as a sort of prologue to the future relations—an entente cordiale—which were happily preserved in after life between teacher and pupil, and to the rôle which this representative of fine old New England stock was to play in the interesting medical drama, soon to be placed upon the stage.

Ten years and more had elapsed before I again came in contact with Dr. Cheever, now the full-fledged practitioner and teacher in the Medical School. As demonstrator of anatomy, he had charge of the personal instruction of the students under the supervision of Oliver Wendell Holmes. Having been given an opportunity to assist in the preparation of the dissection for the daily lecture, I enjoyed the privilege of coming into close contact both with the professor and his assistant. Of Holmes, Cheever says: "Wit, gentleness, keenness of intellect made Dr. Holmes a delightful master." Contrasted with the breezy ways of his senior were the quiet and business-like methods of the taciturn young man.

The holder of the office of demonstrator of anatomy had no sinecure in those days. The medical student was not of the type to which teachers of today are accustomed, but it proved an uphill job even for them to disturb the unruffled demeanor of their teacher.

I recall one occasion when the demonstrator's equanimity was put to a severe test. The dissecting room was in a semi-detached one-story structure, forming a low ell to the main building. It was lighted only from above. One quiet evening, while a section of the class was attending a demonstration by Dr. Cheever, a missile thrown by an unseen foe came crashing through the brightly shining skylight. There was a moment's pause, no one daring to disturb the decorum of one of Cheever's exercises. I glanced with much interest at our instructor to see what effect this extra-mural demonstration would have upon him. After one look at the dilapidated ceiling he turned to the class, and in the words of his ducal prototype calmly gave the order: "Up guards and at them!" Needless to add that the class promptly responded to the call, but not before a discreet enemy had been lost in the darkness of the night.

Dr. Cheever was a popular teacher, for though his manner often seemed cold and reserved, there lay beneath a saving sense of humor, so efficacious an antidote in time of tension. There was always a feeling of perfect confidence by the class in the justness of his decisions. (To the close of his career as a teacher, he retained a tender interest in the welfare of his pupils, as is shown in the foundation at the time of his retirement of the Cheever Scholarship,—the first of its kind—for young men entering the Medical School).

After serving eight years as demonstrator he was appointed adjunct Professor of Clinical Surgery in 1868, and this was followed by further promotion to a professorship of clinical surgery in 1875. It is difficult to appreciate at the present time the full meaning of this recognition of his ability as a surgeon and teacher, and of his standing in the profession.

The foundation of the City Hospital had been looked upon with suspicion by the powers that were of that time, and there was certainly no favoritism in the selection of Dr. Cheever to fill a prominent position in the surgical department of the Harvard Medical School. The teaching staff of surgery would not have been complete without him, and so, with no fear or favor, he rose steadily from one position to another, being made Professor of Clinical Surgery in 1875, and finally, upon the retirement of Dr. Bigelow, the head of the department as Professor of Surgery in 1882.

It is interesting in this connection to glance at a list of the subjects which constituted the course of lectures given by the Professor of Surgery in 1888, as shown in a printed list of the winter's course which lies before me. It covers the same ground as that of his predecessor, and is practically a surgery of the systems. Surgery was only just beginning to claim its share of internal medicine, and as new regions were invaded by pioneers from time to time, the teaching of these new chapters of surgery was relegated to the younger members of the department.

There was no one of the surgical staff at the School who could, however, compare with him as a teacher. Dr. Bigelow's personality had always contributed largely to the prestige of the surgical department in the School, and his course of lectures was always characteristically punctuated by one or two of the interesting or brilliant episodes, with which that distinguished teacher knew only too well how to garnish them. But Cheever's lectures were marked by a clock-work-like precision, by which the ground laid out beforehand was covered systematically from beginning to end. A cool and clear head, a reposeful manner showing the speaker to be perfectly at his ease, a well modulated voice and simplicity of diction (qualities alas, but too rare in lecturers of our profession) combined to enable Dr. Cheever to hold the attention of his class from start to finish.

Lasting proof in the accuracy of this statement is given in that admirable book containing his published course of lectures, which were taken down verbatim by the stenographer and printed subsequently almost as a phonographic record.

Needless to say that the attendance at Dr. Cheever's lectures was always a large one, and that great regret was manifested by the students at his retirement, which occurred in 1893. For many years after this, as emeritus professor, he was invited to give a few lectures on subjects of his own choosing to gratify succeeding classes, who had been disappointed in not being able to count themselves his pupils.

This quality as a teacher enabled him to shine conspicuously at the bedside in clinical instruction. I well recall certain Sunday morning visits at the City Hospital, which I had the privilege of attending after entering upon the practice of my profession. These were models of what such visits should be. No extraneous matter was injected into these talks. There was no wandering from the point which each particular case illustrated, and the story and its moral were told in the fewest possible words, the patient and not the doctor being always kept in evidence.

As I have already intimated, our relation—first that of pupil and teacher, and later of assistant on the teaching staff—were always regarded by me as leaving nothing to be desired. The elder man always took a sympathetic interest in his junior's welfare. No occasion calling for a word of encouragement or congratulation was ever passed unnoticed; and if criticism was necessary, it was always skilfully concealed under the guise of a fatherly suggestion.

I have often wondered whether the current of academic waters flowed as smoothly in other departments of the University as they did in ours while he was chief. Perhaps it was because his depth of character brought a serenity with it which permeated the whole staff, one and all of whom were glad to acknowledge him as their leader.

Through all the period which I have attempted to cover in the course of this personal sketch, the estimate of the man which had impressed itself so forcibly on the child, still seemed to hold true. In whatever rôle he might appear in after life, either as the bold surgeon, or the unflinching leader in a good cause, or the quiet gentleman in somber clothing on his daily rounds, I seemed still to see the garb which was so typical of his ancestry and his character. And when, at the recent Convocation of the American College of Surgeons, the honorary degree of the college was conferred upon him, I saw him for the last time in the robe of the order, he seemed to me to have come into his own again. The somber folds of the academic gown seemed to serve as a fitting setting to the grave and intellectual features of the man and while, during a pause in the proceedings arranged to allow him to retire, he passed slowly down the aisle, leaning upon a proferred arm, his assembled colleagues rose as one man to do him honor as a recognized leader in their chosen profession.

JAMES CLARKE WHITE, M.D.

I.

By Abner Post, M.D., Boston.

Dr. White was so well known as a dermatologist, that comparatively few know the varied activities of his earlier life. He, somewhat unconsciously, fitted himself for the study of medicine during his boyhood and college years. It is very striking that he devoted himself of his own volition, before he even knew what his future life would be, to those preparatory studies which are now required of students entering upon the study of medicine. In his undergraduate diary, he wrote, at the end of his junior year: "I have done much work outside the curriculum in natural history—in botany and ornithology especially—fascinating studies under such teachers as Gray and Wyman." During vacations, he shot and stuffed birds for the college Natural History Society. He refers in his diary to Webster's post-mortem and to walks of his class with Agassiz; of being excused from recitation at the advice of the president to attend an auction of stuffed birds. On May 15, 1853, the latter half of his senior year, he wrote in his diary: "There came to me this afternoon in church the sudden conviction that I would choose medicine as my life work."

In the first two years of his medical course, he spent much time in the study of chemistry. Professor Cooke fitted up a small laboratory for students and in this laboratory, Dr. White gained "a considerable knowledge," as he said, "in analytical and physiological chemistry." He analyzed the Warren collection of urinary calculi and wrote an essay based on that work which received the Boylston Society's prize.

In 1855, he was appointed house pupil at the Massachusetts General Hospital, on the medical side, with Drs. J. B. S. Jackson, D. Humphrey Storer and Henry I. Bowditch as his visiting physicians. George S. Hyde was the other medical, and Lucius Manlius Sargent, Jr., and Alfred Hosmer, the two surgical house puipls.

At the end of this year's hospital service, he returned to the chemical laboratory for two months and in August sailed for study in Europe, going to Vienna instead of Paris, on the advice of Professor Calvin Ellis. In Vienna, he devoted himself to general medicine, but especially to the study of skin diseases, as he says, "perhaps because I felt that I had more to learn in this than in other branches of medicine and that facilities for their study were so extraordinary, rather than with any intention of making it an exclusive field of practice."

A description of Hebra, which he made some years later, shows the impression that great teacher made upon him: "There (in Vienna) they found a man teaching skin diseases as they had never been taught before, with unlimited means of clinical illustration, with the keenest eyes for observation, with an unbounded amount of information drawn from many years of experience, with a self-restraint which no desire for premature fame could tempt into hasty publication, and with a sound and logical mind, the chief of the German school of dermatology—Professor Hebra. Under his personal tuition, they were taught to study diseases of the skin by the simple methods of observation which the naturalist employs upon objects of nature."

The memory of those Vienna days was kept alive by a club of six men who had studied there together,—Drs. Hay, H. K. Oliver, B. J. Jeffries, Hasket Derby, F. B. Sprague and J. C. White. They dined together regularly and a photograph of the group occupied a prominent place on Dr. White's office wall.

On his return to Boston, he entered upon general practice with an office in Hotel Pelham, very recently demolished, and a little later after his marriage, in Park Square.

In 1858, he was appointed Instructor in Chemistry, and in 1866 Adjunct Professor, and while holding that office he made examinations for the Government in all capital cases, and gave his testimony with such impartiality that he was seldom cross-examined.

In 1871, on the resignation of Professor Bacon from the Chair of Chemistry, Dr. White declined further advancement as a teacher in that branch. He had already been appointed visiting physician at the Massachusetts General Hospital and his growing practice, especially in skin diseases, demanded the greater part of his time. That same year, a dermatological department was established at the hospital under his charge and he was appointed Professor of Dermatology in the Harvard School—a chair especially established for him and which he held until 1902.

To his value as a teacher, most of us here can bear witness; of the regard in which he was held by his dermatological associates, one cannot do better than quote a few paragraphs from an obituary notice in the *Journal of Dermatology:*

> "The influence of the pioneers in dermatology must not be underestimated, and foremost among them stands the figure of James Clarke White. Beginning at a time when specialties were unrecognized and repudiated, or at most, grudgingly acknowledged, he devoted himself to the task of showing that progress and the best results are to be obtained by concentration of energy and purpose along well-defined lines. This course required courage and pertinacity, with both of which qualities he was highly endowed. If the path of the specialist seems easy and natural nowadays, it must be remembered that those who mapped it out lived under far different conditions. The prejudices that had to be encountered are more than once touched upon by Dr. White in his reminiscences. But he was by nature truthful, fearless, and, like all strong characters, confident of himself and of his cause, and ready to defend it before any tribunal. These very qualities, which exposed him, perhaps, to the occasional criticism of being dogmatic or controversial, were of inestimable value to the causes for which he labored. His influence at the meetings of the American Dermatological Association was always exerted in the direction of high progress, and his dignified example will be remembered with approbation by all his colleagues, even by those who were sometimes inclined to resent his uncompromising adhesion to his principles."

Dr. White took his duties as Professor in the Medical School very seriously. The world owes him a debt of gratitude for his part in the reform, or better, the improvement of medical education. When he first became a teacher, the requirements for a degree were three years of nominal study with two courses of lectures, and medical schools were dependent upon the fees from these lecture courses for their existence. A small proportion of students supplemented these requirements by summer courses, but the actual requirements for a degree were very low, and there was a very genuine, though by no means universal, desire, in medical circles for a higher standard. Fruitless attempts had been made to unite the medical schools of the country in a combined effort to this effect, but in the absence of a central authority, they were unable to reconcile their varied ideas—and schools were obliged to act individually. If not the first, Harvard was among the first absolutely to reorganize its curriculum, but not without dissension among its faculty. It required faith in the future to believe that it was possible for an unendowed school so to raise its standards as to drive away more than half its scholars and still live. Into that reform, Dr. White threw his whole soul. He was at that time editor of The Boston Medical and Surgical Journal and used the editorial pages to favor the reforms he so ardently wished.

It was the custom to open the winter's lecture course by an address from some one of the Faculty. This duty having fallen to Dr. White, he utilized the opportunity to make another plea for better instruction for students, and again, as anniversary orator of the Massachusetts Medical Society, he made to the general profession a similar plea. It is impossible to distribute properly the credit of this movement, but no one was more persistent in its advocacy than Dr. White. Neither is it easy, at this late day, to understand that it required courage. The improvement appears to us so logical and so necessary that it seems unbelievable that any opposition should have existed. The great hold which it took upon his life is shown by the great space devoted to it in his "Sketches of My Life."

It was a very natural sequence of Dr. White's interest in natural history that he should become a member of the Boston Society of Natural History. He served as its curator of comparative anatomy for ten years, from 1858 to 1868, and was a very active and efficient one. He secured the bodies and mounted the skeletons of the animals from an extensive menagerie, which had perished in a conflagration. There is a tradition at the Museum that Professor Agassiz appeared at the menagerie very soon after Dr. White had completed his bargain, and was very much disappointed at his failure to obtain the skeletons for the Museum at Cambridge. At the present time the Boston Museum is planning to limit its activities to the fauna of New England and the skeletons in question are being transferred to the Cambridge Museum, where Agassiz wished to see them. He also arranged a large collection of birds. He was interested in the construction of the present building at the corner of Berkeley and Boylston Streets.

Fifty years ago, the study of natural history was largely confined to physicians. They were the principal founders of the Boston Society of Natural History. Of its seven officers, chosen at its first meeting, six were physicians. Dr. White was also a member of the American Academy of Arts and Sciences when the same men who were prominent in the Natural History Society, discussed Darwin's doctrine of natural selection.

Dr. White had always the good of the profession as a whole at heart. He did much to bring about mutual acquaintance and confidence between its members. In his address as first president of the American Dermatological Association, he said:

"The little differences of opinion, personal jealousies, and even malicious criticisms, which are so apt to occur among physicians, to the detriment of science, arise largely from mutual misunderstanding and would be far less prevalent if the parties knew each other better." And, twenty years later, in another address, he said: "In that first address I expressed the hope that the dermatologists of this country, who lived widely apart and had been working without meeting each other, some of them for twenty years, would find great advantage in forming a mutual acquaintanceship and comparing and reconciling their individual opinions, often, previously, at unfortunate variance. Certainly we may congratulate ourselves that this most desirable aim has been completely fulfilled; that it is a sincere delight to meet one another at these yearly gatherings; that our respect and esteem for each other has been constantly strengthening during all these years and that we express and criticize our individual observations and beliefs with the utmost frankness without jarring in any measure our bonds of good fellowship."

The same desire to see us a brotherhood of scientific physicians rather than an aggregation of rival practitioners, was manifested among us here in his home. In his "Sketches" he speaks of the many pleasant acquaintances with physicians in all parts of the state, formed during his visits as President of the State Society to the district societies.

In the Massachusetts Medical Society, Dr. White was anniversary chairman, orator and president. He was the first president of the American Dermatological Association and held the same office at its twenty-first annual meeting, but the honor which must have given him the greatest satisfaction was the presidency of the International Dermatological Congress held in New York in 1907.

He was a polished and forceful writer, but many of his writings were on subjects of immediate interest,—addresses and editorials, which played an important part in the questions of the day. They all show evidence of a well-cultivated mind and of high and earnest purpose.

His contributions to dermatological literature were numerous, original and valuable. It is doubtful if he ever failed to contribute something of worth to every meeting of the Dermatological Association.

His book on "Dermatitis Venenata" filled a gap in medical literature. His knowledge of botany and chemistry contributed largely to its value. It illustrates the usefulness to the profession of men with special knowledge in different scientific branches.

In 1914, he published privately and circulated among his friends an autobiography which he entitled "Sketches from My Life," of which mention has already been made. One sees in it the love of natural history and natural science as a guiding force from childhood to old age. It contains his diaries at Cambridge and in the Medical School. In it he lives over the interesting activities in which his life had been passed and closes with an expression of contentment which must come to few.

No notice of Dr. White could be complete without reference to his personal appearance. He carried himself very erect, his dress was always immaculate, and he gave the impression of absolute cleanliness of body and soul. One could not associate anything common or unclean with his personality. This view of the man adds peculiar interest to a description of his first impression of one of the older of the Viennese professors: "He looked as though he had made a very hasty toilette, had forgotten his collar, and had not made the same use of the Danube as we do of the Cochituate," and it also shows that he was able to appreciate the man in spite of this first impression. His description continues: "The man himself has small, beady eyes beaming with fire and *bonhomie*. A great well of cunning and knowledge of the world lies hid therein. His hands, with which he reads such curious riddles of disease, any lady might envy for their shape."

I cannot close this tribute to Dr. White without an expression of my own affection, and with some hesitation I am going to relate an incident, trifling in itself, but revealing a side of his character unsuspected by those who met him only casually. It was my good fortune to cross the water with him in 1896 and to occupy the same state room—and the courtesy which he displayed can never be forgotten. Never for a moment did he forget my comfort. In particular, I recall one afternoon when I felt obliged to lie still upon the lounge—not quite sick but with a strong preference for a horizontal position and quiet. Three or four times Dr. White came to the room, softly opened his trunk, took up and replaced an article or two, asked if I wanted anything and retired. I could not see that he put anything into the trunk or took anything out. The sole object of his visit was his wish to do anything possible for my comfort and to conceal from me the real reason of his visit.

Dr. White died on January 5, 1916, at the age of 83. He had lived to see the reforms in teaching which he had urged so enthusiastically established, and the school which he loved take the high rank to which he aspired for it. He had seen his chosen specialty given its proper place in the medical curriculum everywhere. He had held all the honors his profession could bestow upon him. He left this world followed by the respect of all and the love of those who had known him.

II.

BY FREDERICK C. SHATTUCK, M.D., BOSTON.

FULL of years, full of honors, highly respected by profession and public alike, after an unusually rounded and successful life, James Clarke White has gone to his rest, leaving behind him an example which we very properly, and I trust fitly, emphasize this evening.

He was of Scotch-Irish stock, founders of Londonderry, New Hampshire, some of whom, moving to the Maine coast and mindful of their origin, called their place of settlement Belfast, another important Ulster town. Here, in 1833, our friend was born. One would not suspect that one of his great grandmothers was a Viennese, so characteristically Scotch-Irish were his qualities. It is perhaps well that he was one of a family of seven children, an education in itself. His father was shipbuilder, ship owner, manufacturer, bank president, a leader in all the activities of the town and the country round about. James, fifth child and eldest son, took his A.B. at Harvard in 1853, member of a class prolific in professors, his M.D. in '55, after service as house pupil in the Massachusetts General Hospital. Up to this time Paris had been the Mecca of the aspiring young American man of medicine. White was among the first Americans who broke away from this tradition, encouraged to do so by the suggestion of Calvin Ellis, who had lately visited Vienna, and recognized the advantages offered by that group of remarkable men,—Oppolzer, Skoda, Rokitansky and Hebra. In this step he showed a characteristic trait, that of doing his own thinking. After a year in Europe, a year which all who knew him are sure was filled with diligent purpose alike in purely professional and in general improvement, he settled in general practice in Boston. In dermatology and medical chemistry he had qualified himself especially. His character, his knowledge, and his readiness to use them fully wherever service could be rendered, met with prompt recognition.

My earliest personal recollections of him go back to the middle '60s, when he was Adjunct Professor of Chemistry. My father was then Dean of the Medical School, and the Faculty meetings were held at his house. After due attention to affairs of state, the physical ravages caused thereby were made good by a simple, stand-up supper of oysters, ice cream and wine. To these I was sometimes admitted, and did my best to save waste of food. My most vivid recollection of these meetings is Dr. White, who was always very kind to and considerate of the boy of the house. His manly, clear-complexioned face, his erect form, the conspicuous neatness of his well-cut clothes are all stamped in memory.

After I began to study medicine in '68 his teaching in chemistry and dermatology, and ward visits with him in the Massachusetts General Hospital, to which he was appointed Visiting Physician in 1871, occupy cells in my cerebral cortex which are still in commission. Soon after this came the parting of the ways.

As thorough a man as he could not slur work, and he had to reconcile or decide between the rival claims of general practice, medical chemistry, and dermatology. As a medico-legal expert he made it a rule to appear only for the Government, a practice which enhanced respect for the impartiality of his evidence. To all, no one man, even fifty years ago, could do justice. He chose dermatology, of which he was appointed Professor in 1871, and cut himself off from all other practice. It required great courage in those days to specialize in dermatology; indeed, in anything except ophthalmology. But courage is a quality of which Dr. White had, at least, his share, and his integrity of character was so well known that all understood there was no sham in his adoption of a specialty. It seems a pity that so many present day specialists start as such, instead of growing into specialism, as did White. Perhaps it is unavoidable, so intensively and extensively has knowledge opened up, above all in the last quarter of a century. The body is one, although its parts are many. General practice may be compared with the low power of the microscope. Dr. Owen Wister, of Philadelphia, remarked to me many years ago that "it takes a mighty big man to be a specialist." Dr. White was not what his great teacher, Hebra, used to call "a specialist by the grace of God." His specialism was based on a wide, general experience. On his work and eminence as a specialist I shall not dwell, nor on the very active part he played in medical education and its reform.

Behind the specialist is the physician, behind the physician the man. Dr. White was a virile, a very real man, and it is of him as such that I shall mainly speak. He knew how to play, as well as how to work. At one time he was a diligent frequenter of baseball matches. Always a lover of nature, he delighted in the mountains, the sea, the clouds. At one time no member of the Boston Society of Natural History was more active than he. Since my intimacy with him began, now some thirty years ago, it seems to me that birds and plants especially appealed to him. Every summer he kept a list of birds seen. During a visit to me in the Adirondacks, he sought for and listed all plants bearing berries. He cared more for the beauty of the plant, its flower and fruit, than for intimate structure. I cannot remember ever seeing him use a pocket lens in the woods or fields. Of china he was fond and knew much. Here again his nature asserted itself, his hatred of sloppiness. His interest ran mainly to European and American china, recognizing that the whole field cannot be ploughed by a busy professional man.

He well knew what good food is, how to select and how to prepare it. I should say he was a bit of a gourmet, were I sure that I should be fully understood. His gastronomic tastes were catholic, but there were four things he couldn't, or wouldn't eat. Clams, melons, and pineapples he eschewed because they disagreed with him. The pig to him was an unclean beast, and he would have none of him in any form. His baked beans, to which he was loyal, were married to fat beef. Only a few years ago he was to dine with other friends at my house. Luckily I found out in time that all four of his taboos were on the proposed menu. He was a judge of wine, of which he had a careful and wisely selected cellar, much enjoying a good glass with friends. Cocktails and tobacco had no charms for him. When he took alcohol, he took it like a gentleman, in the form of wine, and with his dinner. He was a wide reader, with system in that, as in other things. He rarely slept after six, and got in an hour's reading before rising. Of the First Church he was an active member, serving on the Standing Committee for some time as Chairman, and on various other committees.

The society of his friends was a delight to him. He was always courteous and considerate of others, perhaps not quick to give his friendship, but once given it was firm as a rock. His social talents had wider scope as his time was freed from the Medical School, and the Hospital, and, finally, from private practice. Some of the leisure thus won resulted in his interesting "Sketches of My Life," and in his sketch of the Clarke-White family.

The last years of his life he passed the months of June to October at Islesboro in Penobscot Bay. His white house was on the crest of a ridge one hundred feet above the water, and contained collections of books, china, furniture, and pictures, which gave him great enjoyment, alike in collecting and in owning. The cupola, to which he liked to lead the way, commanded both east and west bays, and more than twenty towns, among them Belfast, his birthplace, some ten miles away. On his west porch he passed much time, delighting in the ever-changing views of the Camden Hills, and the activities of Gilkey Harbor. No yacht entered or left unnoted by him. Many friends will cherish many memories of this porch, and regret that memories alone remain for them.

Of sentiment he rarely talked, but he had it abundantly.

Some we call good are so negatively, rather than positively. Not so Dr. White. Virile, fearless, aggressive, he was a good fighting man, good man of medicine, good citizen, good friend. An unusual degree of these by no means synonymous forms of goodness was happily and rarely blended in him.

He was a knight, *sans peur et sans reproche*. In life he stood for all that was best. Is there any better preparation for death, anything which one of us could more wish said of him? Let us honor him by striving to follow his example.

REMARKS.

Dr. Sprague: I wish to add a few words of a personal nature to the tribute to Dr. White, as coming from an old friend and contemporary. Dr. White and I were fellow students in the Medical School, where we had a pleasant acquaintance, and afterwards met in Vienna, in 1856, where we roomed together for the greater part of a year. At that time Europe was not the familiar ground which it has since become to the American traveler and student, and Vienna seemed especially remote and strange, in truth a far country. This tended to increase our intimacy, an intimacy that has existed and thrived through all these succeeding years, although our paths have, in many respects, been in different directions. Dr. White at that time showed the qualities that in later life carried him so far. He had untiring energy, great industry, was a keen observer, and possessed of excellent judgment. He was always self-reliant, and had a strong personality that was evident to everyone who came in contact with him. He had a most retentive and accurate memory, and was often called upon by his intimates to refresh their recollections. He thought clearly and wrote exceedingly well, with a clearness and conciseness difficult to surpass. He was a keen critic, but never indulged in a carping spirit. He was always fair and above-board, and he had a generous admiration for talent shown by others or good work done by them in any direction. He had an independence that made him more willing to confer a benefit than to receive one. He had high standards and lived up to them. In his death his associates have lost a true friend, a genial companion, and a sterling gentleman.

Original Articles.

EPIDEMIC POLIOMYELITIS. THE SYMPTOMATOLOGY AND DIAGNOSIS IN THE ACUTE STAGES.*

By Francis R. Fraser, M.B., New York.

[From the Medical Clinic, Presbyterian Hospital, Columbia University, New York.]

The evidence at present available on the manner of conveyance of the virus of acute poliomyelitis points to the importance of personal communication of the infection.[1]

Acute cases, recovered cases, mild cases, abortive cases and human contacts are all capable of conveying the infection. Any methods of isolation and quarantine that may be deemed necessary as preventative measures require for their efficient administration that all cases, including the abortive forms, should be recognized early.

The diagnosis of acute poliomyelitis is not of great difficulty after paralysis sets in, but is of extreme difficulty in the preparalytic period and in mild and abortive cases. The acute stages may be divided into four periods. There is first a period of incubation, when no symptoms are present and when the patient is apparently perfectly well. The length of the incubation period is difficult to ascertain, largely because of the difficulty of determining the source and time of infection, but has been variously computed to be from two to ten days, and may be as long as three weeks. A study of the experimental disease in monkeys, which simulates the disease in human beings very closely, shows that in monkeys there is an incubation period varying from three to forty-six days or longer. The second or preparalytic stage is marked by a sudden onset. From the statistics of the Vermont epidemic of 1914, it is found that of two hundred and eighty-four cases, one hundred and seventy gave a history of excellent health before this onset; in ninety-seven the health is recorded as good, and in eighteen as poor. The preparalytic period may be entirely absent, and this is commonly seen in the sporadic cases, but in epidemics it is almost always present. In one hundred and twelve cases admitted to the Hospital of the Rockefeller Institute during the years 1911-1913, in whom the time of onset of the preparalytic period could be definitely ascertained, the average duration of this period was over two days. The longest period in this series was fifteen days, although in a few cases the preparalytic and general symptoms have disappeared entirely for a few days, only to return with paralysis. The third period follows the second immediately, and is characterized by paralysis or weakness of muscles, in addition to the symptoms that characterize the earlier period. The paralysis may be developed suddenly without further spread, or the further involvement of muscles may continue for an indefinite period, usually for a few days only, and seldom for more than ten days. In the fourth period no further spread takes place; the patient's general symptoms are still present but are subsiding. This period occasionally ends sharply, as if by crisis, but is more often prolonged, the symptoms disappearing gradually. It may be many weeks before the pain and tenderness and other acute symptoms disappear. With this period the acute stages may be considered to end, and it is then the results of the disease that have to be dealt with.

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* An abstract from lectures delivered to the medical profession in the State of Vermont during the summer of 1915, at the request of the State Board of Health.

The lack of definition of these periods is to be expected since they are defined by symptoms which are only the outward evidence of the disease process that is taking place in the body generally, and in the central nervous system in particular.

Incidence.—All classes of the community appear to be equally affected, and although the disease is commonest under the age of twenty, there does not seem to be any limit to the age of the persons attacked. Two hundred and ninety cases in Vermont in 1914, grouped in age periods, show:

Under 1 year..................	0	cases
Between 1 and 2 years.......	37	"
Between 2 and 5 years.......	88	"
Between 1 and 10 years.......	75	"
Between 10 and 20 years.......	63	"
Over 20 years..................	27	"

That a history of excellent health immediately previous to the attack is the rule, has already been pointed out. Seasonal incidence has been the subject of much statistical study and, as in most epidemics in this country, so in the Vermont epidemic of 1914, the incidence was greatest during August.

Symptomatology.—I. Preparalytic and General. When the case is first seen by a physician the parents, as a rule, state that there was a sudden onset of feverishness, with drowsiness, general weakness, loss of appetite or vomiting. and perhaps irritability and restlessness. Frequently such a condition persists for two or three days before the attendants realize that something more than a mild disturbance of the digestion is present.

(*a*) Fever is always present at the onset in the epidemic cases. Temperatures as high as 104 and 105 are noted at the onset and in a few cases before death, but it is more usual to find temperatures of 101 to 103 swinging slightly, and gradually subsiding in the course of a few days. It is not unusual to find readings of 100 for many weeks after the acute attack is over and when recovery is well advanced. In a few cases, generally those in which the symptoms are indicative of lesions in the upper part of the central nervous system, a continuous fever of 103 or 104 is seen for three or four days, ending sharply in a crisis.

(*b*) The pulse rate follows the temperature, and any pronounced departure from this rule should lead to a search for some cause other than poliomyelitis.

(*c*) Gastro-intestinal disturbances are usually present and may predominate in the first few days. Loss of appetite is always present in the febrile stages, and the illness may be ushered in by vomiting. Profuse diarrhea is rare, and constipation is more often present and may be marked. The vomiting rarely persists after the first two or three days. Abdominal tenderness is often seen and is part of a generalized tenderness of muscles. This is especially the case where the abdominal muscles are paralyzed and, as with the paralysis, the tenderness may be localized to a part of the abdominal wall only.

(*d*) Preparalytic symptoms referable to the respiratory tract have been prevalent in a few epidemics, but this is unusual. It is not uncommon to find slight catarrh of the upper passages, and frequently the tonsils and pharynx have a slightly reddened and congested appearance. An acute tonsillitis and the formation of a membrane are so seldom seen that their presence would suggest another diagnosis. In cases where the pharyngeal muscles are paralyzed mucus and food collect in the pharynx, and by causing great distress may distract attention from the real cause of the condition. When paralysis appears, the respiratory system acquires a peculiar importance that will be discussed later.

(*e*) Frequently the first symptom to attract attention is a heaviness and drowsiness. In cases severely infected the patient appears to be in coma, but more frequently there is simply a desire to be left alone and a disinclination to play or to take part in activities of any nature. There is, however, no mental dulness, for when spoken to or aroused there is brightness and mental activity that is surprising. In fatal cases this mental alertness to the very end is a picture that is not readily forgotten when once seen.

(*f*) Accompanying this drowsiness there is an irritability, when roused, that is in striking contrast to the heaviness seen when the patient is left undisturbed. The child objects to any examination or handling, and the doctor is in more disfavor with his patient when dealing with acute poliomyelitis than with almost any other condition. This child may be ever so good-tempered and tolerant with strangers as a rule, but when suffering from acute poliomyelitis, the disposition is very constantly described by the parents as "cranky." With this mental irritability there is a physical restlessness. Sleep is broken and there is a constant tossing and moving from side to side. Delirium and convulsions are rare.

(*g*) Frequently the whole body jerks from time to time, but there are also seen sharp single jerking movements of a part of the body only—of one limb or of one side of the face—or of several parts. It is noticed that the parts that show such jerking movements are frequently the parts that later become paralyzed. Such jerking movements may be due to irritation of the anterior horn cells before the cells are so damaged as to cause paralysis of the part.

(*h*) A diffuse generalized sweating is commonly seen in the very severe cases, and may continue both day and night for many weeks after convalescence is established. It is more profuse at night in such cases. As a rule, when present it is only during the febrile period. Less common is a localized sweating seen in a part that later becomes paralyzed. This phenomenon may be related to the jerking movements described above and to the association in the anterior horns of the gray matter of the cord of the motor cells and the cells governing the sweat functions.[2]

(*i*) In the early period before definite paralyses are seen, there is apparently a general weakness of the musculature of the whole body. When a patient recovers from the acute stage in a few days with little paralysis, the strength of the unaffected muscles is in marked contrast to the apparent weakness of the same muscle in the febrile period. It is difficult to estimate how much of this is due to lack of effort on the part of the patient, but this weakness is more marked than in other conditions with a similar degree of fever.

(*j*) Unlike other infectious diseases of childhood, acute poliomyelitis is accompanied by diffuse pain and tenderness. The child objects to being handled largely because of pain. There may be hyperesthesia of the skin, so that the lightest touch causes pain. In other cases, tenderness is not elicited until pressure is exerted on the deeper structures, especially the muscle masses. There is still a third degree of tenderness, when no pain is elicited until the part is moved, when stretching of the muscles, tendons and articular structures causes pain. The pain may be generalized throughout the body, or, as is usually the case, where passive movement is required to elicit it, it is present only in a part that is paralyzed or about to be paralyzed. Since the pressure of the bed or the attitude of the patient causes pressure on deep structures or stretches tendons and ligaments, it is difficult to ascertain that true spontaneous pain is present. Sometimes the most careful adjustment of a part to avoid pressure or tension fails to relieve the pain, even in older patients, who can coöperate so that the presence of spontaneous pain, as distinct from tenderness, appears to be demonstrated. Older patients who are able to analyze their symptoms, commonly complain of severe headache, and this may be the earliest symptom. The pain in such a case is usually not localized to any particular portion of the head.

(*k*) Pain in the back of the neck and in the back is an important symptom. This may be spontaneous, but is more often seen only on attempting antero-flexion of the neck and back. To prevent such flexion the muscles of the neck and back are held contracted and give the stiffness that is so characteristic and that early in the disease is suggestive of some lesion of the meninges or central nervous system. Opisthotonos may be present, but this degree of retraction is rare. The patient prefers to lie on one side so that the head may be held tilted slightly backwards, or on his back with a pillow beneath the shoulders so that the head falls back. The stiffness may not be noticeable until anteroflexion is attempted, when pain is complained of and the protective muscular contraction becomes evident. When the posterior muscles of the neck and back are paralyzed this important sign disappears. Kernig's sign is not, as a rule, present.

II. Spinal Fluid. The early pathological findings include congestion of the vessels of the meninges and a perivascular cell proliferation. The earlier clinical findings include stiffness of the neck and back and a moderate degree of retraction. In these early stages of the disease there is a meningitis. As might be expected, then, there are changes in the spinal fluid. Although the changes are not characteristic of this disease alone, lumbar puncture and examination of the spinal fluid are helpful in the diagnosis from many other conditions that show similar early signs and symptoms, and also in differentiating the disease from other types of meningitis. The fluid, though apparently increased in quantity, is not, as a rule, at greatly increased pressure, but may occasionally spurt out as in tuberculous meningitis. A slight opalescence and occasional flakes of fibrin have been described. The cells are increased in number, and there is an increase in the globulin content. Cell counts of over 1000 per c.mm. are found but they are rare, and counts of under 100 are more common. During the first few days polymorphonuclear cells and cells with irregular nuclei may be numerous, but after the first week the increase is due almost entirely to cells of the lymphocytic type. The globulin increase is found in half the fluids examined during the first week, and the proportion showing this abnormality increases to the third week.

In the first week after the appearance of the first symptom, nearly all the fluids show abnormalities in cell count, of globulin content, or both; in the fourth week about 50% are abnormal; and after the fourth week the proportion falls off very rapidly. The fluid does not clot and is sterile, and no organisms can be found in the centrifuged deposit. The changes in the spinal fluid seem to be independent of the onset of paralysis.[3, 4]

III. Blood. The examination of the blood does not help to a positive diagnosis, as there is no change in the number of red cells, while the number of white cells is within the limits of normal variations. A slight increase in the proportion of polymorphonuclear cells may be seen with similar diminution in the number of lymphocytes.[3] A blood count is of value in that any great departure from the normal would indicate a search for some cause other than poliomyelitis.

IV. Disturbances of Motor System. After a variable period of preparalytic symptoms, paralysis is seen, and the diagnosis is then greatly simplified. The pathological lesions may be very diffuse or may be localized. The paralysis may involve almost all the body musculature or may be limited to a muscle group or a muscle. The lesion may be severe, producing a permanent complete paralysis of the affected muscles, or may be mild, causing a partial paralysis or only a temporary weakness. A most thorough examination is, therefore, necessary, and the strength of every muscle must be tested. Changes may take place rapidly and in the course of a few minutes, and frequent examinations may be necessary to establish a diagnosis and to determine the prognosis. The most characteristic lesion of the motor system is an involvement of the anterior horn cells, resulting in a flaccid paralysis of the corresponding muscles. The lesion may, however, be in the higher parts of the cord or in the brain. A spastic condition would then result, and this is frequently seen, though usually as a transient condition during the period of advancing paralysis. The centres in the medulla oblongata are also frequently involved, giving bulbar paralysis. The irregularity of the distribution of the muscles involved is very characteristic of the paralysis of poliomyelitis. Hemiplegias and paraplegias are not common, and simple monoplegias would probably be considerably rarer than statistics show if some instrumental method of examination of the other muscles of the body were employed.[5] Even with the crude clinical examinations so far employed all the muscle groups of a limb are seldom equally involved. Weakness of a muscle of the eyeball on one side or a slight ptosis are not infrequent, and involvement of the muscles of facial expression was found in a third of the cases in one series. Seldom are the facial muscles on both sides paralyzed, and it is usual to find either the upper or the lower parts of the facial musculature only involved. The tongue, the palate, and the pharyngeal muscles must also be examined. The muscles of the neck and back and of the abdominal wall are important, as supporting apparatus may be necessary to prevent deformities if these groups are involved. Of greatest consequence to the patient is the condition of the respiratory muscles. Fatal cases invariably result from paralysis of the respiratory muscles. With the diaphragm alone, or with the serratus muscles alone, the respiratory movements may be carried out efficiently, but when both are paralyzed death results. From the first sign of weakness the spread to paralysis of both groups is sometimes very rapid, so that a careful examination is of the greatest importance. An estimate of the efficiency of the serratus muscles may be obtained by interfering with movements of the diaphragm by firm pressure on the abdomen, and of the diaphragm by the prevention of the expansion of the thorax by pressure there. Incontinence and retention of urine are both seen, and a flaccid condition of the anal sphincter is reported. Much information as to the condition of muscles can be gained from an inspection of the attitude of the patients as a whole, and of the limbs and by testing the tone of the muscles on passive movements. Isolated active movements are difficult to elicit in infants, and the coöperation of the mother is of the utmost value in completing a systematic examination.

V. Disturbances of Reflexes. Short of demonstrable disturbances in the functions of the muscles, disturbances in the deep reflexes are found. In the early stages and in mild cases these may be the only indications of lesions of the motor mechanism, so that a careful examination of the reflexes is helpful. As in the case of actual paralysis, it is the asymmetry of the disturbances that is characteristic. Reflexes may be exaggerated one day and absent the next, with demonstrable paralysis not appearing until the day following; or, the reflexes may gradually be lost without any demonstrable paralysis whatever developing. Exaggerated reflexes in one part and absent reflexes in another may be present at the same time. Valuable information may also be obtained by the examination of the superficial reflexes.

VI. Disturbances of the Sensory System. It has been demonstrated that the earliest and most constant lesion in the experimental disease is found in the posterior root ganglia.[6] These rarely go on to complete destruction of the ganglion cells, so that, although permanent disturbances of sensation are not to be invariably expected, temporary disturbances during the stages of congestion and edema and cell infiltration may be expected. These interstitial changes have been seen in the preparalytic stages in monkeys. The pain and hyperesthesia may be due to these histological changes. Because of the usual age of the patients and their general condition in the acute stages, an accurate examination of sensations is impracticable by the ordinary clinical methods. Definite impairment of sensation has been demonstrated in a few instances in older patients. It is possible that many of the cases that have been called "abortive" would show changes if more accurate methods of estimating muscle power and sensations were available. It is probable that many cases of doubtful diagnosis could be cleared up by such examinations.

Abortive Cases. It is difficult for medical men who have not had opportunities to observe acute epidemic cases of poliomyelitis, to believe in the presence of abortive forms. It was first pointed out by Wickman[7] that abortive cases form a large proportion of all cases in an epidemic, and it has been suggested that they may even outnumber the paralyzed cases. It is of importance then, in taking any steps to prevent spread by quarantine, that the mild and abortive cases be recognized. The evidence in support of the occurrence of such cases is considerable, but owing to the nature of the condition it has not been possible to demonstrate the characteristic pathological lesions in a human case. The occurrence of every grade of severity, from the totally paralyzed rapidly fatal cases to the rapidly recovering cases, with at no time more than the mildest degree of weakness in one muscle, suggests that still milder cases, with general or perhaps meningeal symptoms only, must also occur. In most epidemics that have been carefully observed it has been pointed out that mild degrees of fever and gastro-intestinal disturbances occurred to a greater extent than usual among the unaffected members of the community. In 1894 Dr. C. S. Caverly[8] noted that during the epidemic of that year in Vermont, the infectious diseases of children were accompanied by nervous disturbances. Kling, Wernsted and Petersen[9] demonstrated the presence of the virus of poliomyelitis in the throat washings of such cases. Changes typical of poliomyelitis have been demonstrated in the spinal fluid of such cases. Monkeys have been inoculated with small doses of the virus of poliomyelitis, and after showing the prodromal symptoms, have recovered, and their immunity demonstrated by their resistance to a second inoculation.[10] Such cases are characterized by the preparalytic and general symptoms described above. They are usually mild and ambulant, but may show the pain and hyperesthesia and meningitic symptoms. If such a condition is suspected, lumbar puncture should be performed.

Diagnosis. In the preparalytic period and in abortive cases the diagnosis depends, to a great extent, on the presence of an epidemic and association with other cases. Under these circumstances, a history of sudden onset with fever, gastro-intestinal symptoms and perhaps pain, would indicate a careful examination for signs of stiffness of the neck and back. If any suspicion of a meningitic lesion is entertained, lumbar puncture must be performed, when the condition of the spinal fluid will clear the diagnosis in most cases. The differentiation from a gastro-intestinal upset is most difficult. The onset may be quite sudden, the fever and general condition identical, and there is frequently objection to being handled and to flexion of neck and back. The spinal fluid is, however, normal; diarrhea is more usual than constipation, and the vomiting more persistent. The other common infectious diseases commence similarly, but in them the pain and hyperesthesia is usually absent, the spinal fluid is probably normal, and a characteristic rash develops. Sufficient data on the spinal fluid in acute infectious diseases have not yet been collected for the findings to warrant an absolute opinion. Skin lesions have been described, but are not constant in character and are present in only a small number of cases. Acute rickets is easily mistaken because of the fever, the prostration and the tenderness. The spinal fluid, however, is negative, and in poliomyelitis pronounced enlargement of the liver is not found. Tuberculosis of the hip can be differentiated by the history of onset. Acute rheumatic arthritis may commence acutely and the fever, pain and disinclination to move be very similar, but the tenderness is localized to the articular structures, and in poliomyelitis there is no swelling of the periarticular structures and no synovial effusion. Meningitis due to the meningococcus, to the pneumococcus, to the influenza bacillus, to streptococci and staphylococci give a spinal fluid with cell increase due to polymorphonuclears, and the causal organism can be found in smears and can be cultivated. In tuberculous meningitis and syphilitic meningomyelitis the spinal fluid is very similar to that of poliomyelitis, and the clinical findings do not differentiate until the case has been watched for a few days. In tuberculous meningitis the bacillus can be found by repeated careful examinations, and in syphilitic meningitis the spinal fluid gives a positive Wassermann reaction. A positive Wassermann reaction in the blood is not sufficient to differentiate, as it may be found in acute poliomyelitis as in other acute infections. Even when evidence of paralysis or of involvement of the motor system is found, the diagnosis may not be clear. Tuberculous meningitis and syphilitic meningomyelitis require as careful differentiation in the preparalytic period. Evidence of tuberculosis in other parts of the body and the absence of complete paralysis of muscle groups in a seriously ill child help to differentiate in the one case, and the signs of congenital syphilis in the development of the skeleton and the enlargement of the liver and spleen help in the other. Acute poliomyelitis is probably more often mistaken for cerebrospinal meningitis than for any other disease, especially as paralysis may occur in both, but the rash, the photophobia and characters of the spinal fluid should easily differentiate them. Brain tumors, tumors of the spinal cord, and many other conditions of the cerebrospinal axis have rarely to be differentiated. If physicians are alert and neglect no methods of examination that may help to a diagnosis, the abortive cases will be missed less often, and the frank cases will be recognized earlier and valuable help rendered in any attempts at prophylaxis by quarantine methods.

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ANATOMIC FORM AND POSTURE, IMPORTANT FACTORS IN THE TREATMENT OF PULMONARY TUBERCULOSIS.*

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

IN that which is presented to you tonight it is my hope that lines of investigation may be suggested that will be of help in understanding the conditions which lead to tuberculosis, with the natural effect which such understanding should have upon the control of the disease. That my remarks are made with much hesitation is not strange, in the light of the admirable work of the men of this community, added to the fact that the treatment of this disease, apart from its manifestations in the bones and joints, has received but little attention from me. My reason for venturing to speak to you is that in my twenty-five years of work with the chronic patient, a little of the wonderful spirit of optimism which your great leader, Dr. Trudeau, so largely possessed, has come through to me, resulting in the belief that all of these chronic diseases must be understandable by, and ultimately controllable through, the human intelligence. In the study which this spirit has forced, certain things have been revealed which have not only benefited the patients who turn to me for advice, but which seem of equal applicability in many other forms of disease. With the hope that some of these principles may be of benefit in your work, in pulmonary disease, I am venturing to address you.

In the first place, in attempting to fathom the nature of the chronic diseases it has been clearly shown that, despite the text-book teaching, human beings are not all made alike. That there are distinct types, showing differences in contour of body, form of skeleton, texture of muscle, shape and attachment of viscera, etc., etc., there can be little question, and all of this has been fully described in the Shattuck Lecture.† Not only do these types of anatomic form exist, but apparently each type has its own more or less definite potential of disease, and of these types the one which most concerns us, because tuberculosis is a part of its pathologic potential, is the slender type, which has been designated by different writers as the congenital visceroptotic, the carnivorous, the hyper-onto-morph.

Why this type is so commonly tuberculous is not, of course, wholly plain, but there are certain suggestive features. In the first place, the individual is usually poorly nourished, due perhaps in part to the fact that the length of the small intestine, from which the food must be assimilated, is much less than the normal, frequently not more than half. The blood pressure is usually considerably below what is considered normal, suggesting, as does the poor nutrition, a low resistance. There is usually more or less anemia. The internal glandular secretions are frequently disturbed, as well as other evidence of abnormal physiology.

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* Address delivered before the Saranac Lake Medical Society, at Saranac Lake, New York, Feb. 9, 1916.

† An Anatomic and Mechanistic Conception of Disease, BOSTON MED. AND SURG. JOUR., June 17, 1915.

To recognize these disturbances of physiology, however, does not necessarily explain their cause, and in the attempt really to get back to the primal reasons the following facts were revealed.

The slender anatomic type, if it develops naturally, acquires habits of carriage in the periods of rapid growth, in which the ribs are lowered and the chest is used in the position of full expiration. In this position the thoracic breathing must be very imperfect, and full expansion of the chest rarely occurs. Under such restriction the lungs cannot develop their full strength. In normal breathing there should be a moderate excursion of the chest, with the rise and fall just about midway between full inspiration and full expiration. The average ratio is one and one-half to two inches above the neutral to full inspiration, with about the same below the neutral to full expiration. In the posture naturally assumed by the slender anatomic type (when standing), the neutral position is, however, from one-quarter to one-half inch above full expiration, with an excursion of from two and one-half to three and one-half inches above this point in full inspiration. Naturally this position of full inspiration is rarely taken.

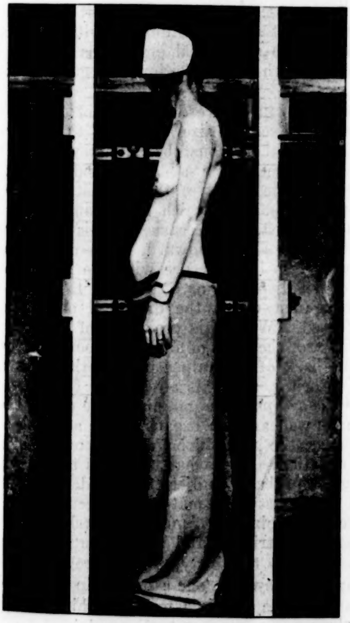

FIG. 1.—A case of pulmonary tuberculosis, in the slender anatomic type, with the chest flattened so that the antero-posterior diameter is less than normal. The lateral diameter is not changed.

In this position, with the lowering of the ribs or the flattening of the chest, there are two distinct types. In one the lateral diameter of the thorax remains the same and the front wall of the chest simply drops downward (Fig. 1), exactly as if a hoop attached at the back were lowered in front. Since the anterior part of the rib normally is lower than the attachment at the spine, the lowering of the anterior part below this normal must naturally lessen the depth of the chest,—its anteroposterior diameter.

In the other type the ribs are narrowed in at the side, with the result that the lateral diameter is less (Fig. 2), but with the crowding in of the ribs from the side, the sternum must be forced forward, so that the anteroposterior diameter is usually above normal (Fig. 3). In this type of posture the lower ribs are drawn in so much that the angle formed by the edge of the lower ribs and the tip of the sternum is small and much less than the right angle, which is normal and which may exist in the other type of chest.

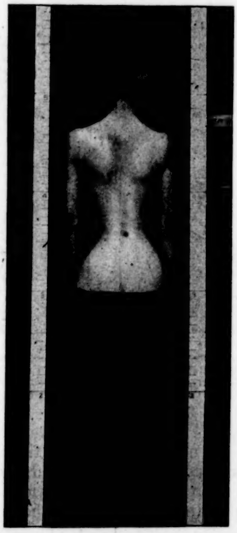

FIG. 2.—The slender anatomic type with the lateral diameter much below normal, but with the antero-posterior diameter increased.

In the first type (Fig. 1), the chest is so much flattened that there must be less than the normal space for the heart, while in the latter (Fig. 3) this space is not as much interfered with. It is not impossible that this is one of the explanations for the rapid rate of the heart in some of the flat-chested individuals.

With the lowering of the chest to the position of full expiration, irrespective of whether the sternum is flattened or forced forward, not only is the thoracic part of the respiration interfered with, but the position of the diaphragm must be changed, with resulting interference with its function. In normal breathing the movement of the diaphragm should be midway between full inspiration and full expiration (Fig. 4). With the posture here described, however (with the patient standing), the diaphragm is used at its low point or at full inspiration (Fig. 5), the upper point, or full expiration, being reached only when effort is made. This means that this part of the respiratory mechanism must be seriously interfered with. From this not only must the lungs suffer, but from the appearance of the tracings it is probable that the heart action is also interfered with. Still further, this absence of the movement of the diaphragm must seriously interfere with the circulation in the abdominal organs, as well as interfering with their position and general function.

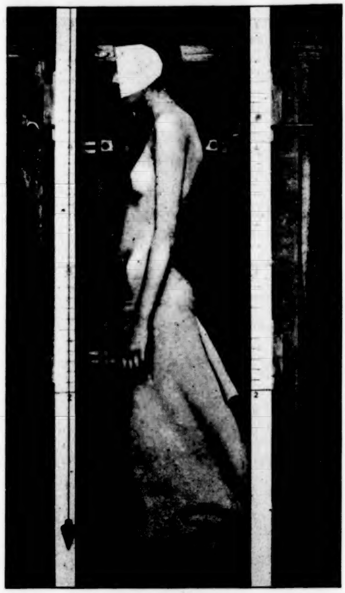

FIG. 3.—A tuberculous patient, showing the slender anatomic type, with the anteroposterior diameter greater than normal, due to the pushing of the sternum forward by the narrowing in of the ribs from the side.

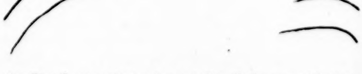

FIG. 4.—The fluoroscopic tracings of the diaphragm with the outlines of the heart taken of a person of the normal type of anatomy when standing. The two middle lines represent the excursion of the diaphragm in normal breathing. The uppermost line represents the position of the diaphragm assumed in full expiration, and the lowest line the position assumed in full inspiration. Note in this that the normal breathing should be just about midway between the two extremes. This condition is never seen in the slender or tuberculous type when the patient is standing.

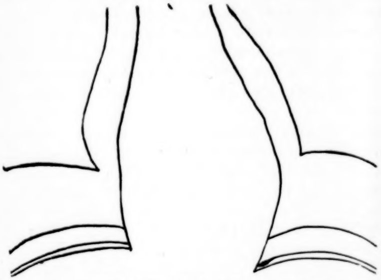

FIG. 5.—The fluoroscopic tracings of a patient of the slender anatomic type taken with the patient standing. The two middle lines represent the excursion of the diaphragm in normal respiration. The lowest line is the position of extreme inspiration, and the upper line the position of extreme expiration. It will be seen from this that in the slender type the excursion of the diaphragm is slight and only under considerable effort is anything like the normal excursion of the diaphragm made. When lying down flat upon the back and without pillows under the head, the diaphragm in this case at once assumed the position and the range of motion as shown in Fig. 4.

In the posture here described not only is the thorax changed in size, but with the lowering of the ribs there must be a narrowing of the space in the upper abdomen under the diaphragm. The result of this is that the proper amount of space in which the organs should lie does not exist, and because of this the organs must be forced downward, with undoubtedly more or less interference with the function of the organ displaced or of some of the other organs against which the displaced organs may be forced. With this crowding of the organs downward, the pads of fat which normally exist in the back of the upper part of the abdomen, are absorbed, and this absence of fat must expose the sympathetic ganglia in the upper abdomen, as well as such organs as the adrenals, the pancreas, the great blood vessels, etc., to injury or irritation. Just what this does to the physiology is probably subject to considerable variation and must be a matter of speculation; but since the respiratory function, as well as the circulatory, nutritive, and all of the involuntary functions of the body, are controlled by the sympathetic system, one cannot help questioning whether some of the symptoms which are seen in these cases are not to be explained by this mechanical stimulation or inhibition of these ganglia. It is not our purpose to go into all the possible suggestive evidence in this line, more than to call attention to it and to state that apparently vigorous health does not occur until, with the general remodelling of the body, these fat pads are replaced.

That which has been stated thus far assumes that the body is studied in the standing position. Under these conditions the lungs cannot work rightly because of the change in the shape as well as the movement of the thorax, and also because of the change in the position, as well as in the movement of the diaphragm. This naturally results in the lungs being weaker and less resistant than is normal. Added to this, the disturbance of nutrition, with the possible disturbance to the physiology resulting from the irritation of the abdominal ganglia, and the conditions seem to be reasonably favorable for the development of disease, whenever the pathologic organism is introduced.

While all this is true if the body is considered when erect, it should also be remembered that other postures may be even more harmful. The relaxed or slouched position so commonly seen in sitting, or the more or less common bedtime position, with the head and shoulders raised upon two or three pillows (Fig. 6) may restrict the thoracic or diaphragmatic function even more than has been described. The position of the diaphragm under these conditions is crowded upward to the position of full expiration (Fig. 7), with very slight range of motion in breathing, while at the same time the position of the thorax is changed but little. This naturally increases the restriction of the breathing, and since, as is shown by the tracings, the heart at the same time is crowded upward into a more confined space, it is not impossible that some of the symptoms of disturbed circulation and thoracic distress may be due to this.

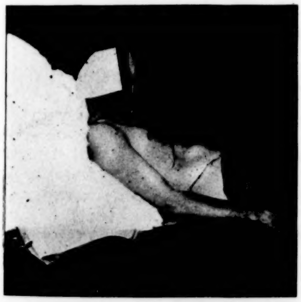

Fig. 6.—Not an uncommon position for patients to assume while in bed. The effect which such position must have upon the breathing or upon the function of the abdominal organs must be obvious.

To understand the types of posture here shown, and to appreciate that which is naturally involved in the treatment, it should be remembered that the suspensory ligament of the diaphragm is the pericardium, with the expansion at the top into the fascia that is attached to the sides of the low cervical spine (Figs. 8 and 9). Drag upon this will result in the cervical spine being bent forward and the ribs lowered, as is shown in Figs. 1 and 3.

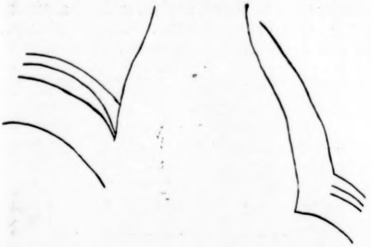

Fig. 7.—Fluoroscopic tracings of the diaphragm and the outlines of the heart taken with the patient lying down and with two pillows under the head. The two middle lines represent the excursion of the diaphragm in natural breathing. The upper line is the position of extreme expiration, and the lower line the position of full inspiration. From this it is seen that not only is the diaphragm raised and moves but little in ordinary respiration, but that it is forced up to the position of almost full expiration.

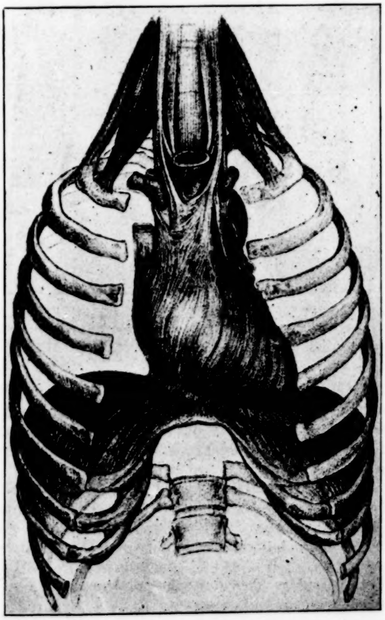

Fig. 8.—Showing the relation of pericardium to diaphragm with the extension of the fibres of the pericardium into the fibrous bands which are attached along the sides of the low cervical spine forming the suspensory ligament of the diaphragm.—*Archiv f. Anat. u. Physiol.*, 1877, Taf. xx.

To raise the diaphragm and to elevate the ribs, the cervical spine must be flattened as it is when the head is fully erect, and if this connection between the low cervical spine and the diaphragm is not appreciated, it can easily be demonstrated by standing with the body relaxed and drawing back the head, as if making a "double chin." One cannot do this without raising the ribs and drawing in the upper abdomen.

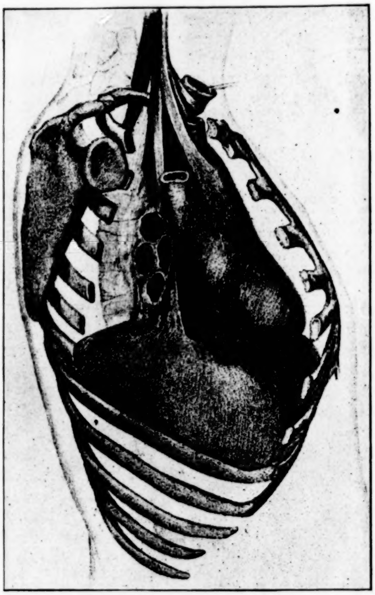

Fig. 9.—Lateral view showing effect of the pericardium upon the diaphragm as the suspensory ligament with the fibrous bands extending up to the sides of the low cervical spine.—*Archiv f. Anat. u. Physiol.*, 1877, Taf. xi.

Of interest in this connection are the reflex acts of sighing and yawning. Both are, when analyzed, movements of the diaphragm toward full inspiration, and are made usually when one is sitting slouched or when pillowed up on couch or bed. The sigh or yawn is apparently to overcome the harmful effect of these postures. To sigh with the head forward and the chest relaxed is possible but not natural, while to yawn with the head and chest in this position is impossible. To yawn, the head must be raised, the upper spine straightened, and as a part of this the ribs and diaphragm are raised. Whether these instinctive acts are performed to relieve thoracic or abdominal discomfort, is not always plain, but that it must be partly thoracic there can be little question.

The practical suggestions which these facts have for us are, it seems to me, that if we are to do the best we can to ensure health, with the greatest amount of vigor to combat disease of any kind, we must see that the body is so used that the rhythm of respiration, both as it refers to the thoracic and the diaphragmatic movement, is as nearly normal as possible. This is obtainable only when the body is used without being bent at the waistline or drooped. In sitting or standing the torso should be straight, as it would be if fully erect, and in lying down the same straight position without pillows should be insisted upon.

These positions not only ensure a better chance for the proper development of the lungs, but the abdominal organs must be drawn into better position, so that their function must improve also.

To use a back brace for a case of pulmonary tuberculosis may be unusual treatment, but with these facts before us it is not irrational, and both of the cases depicted in Figs. 1 and 3 were referred to me by men trained, as you are, in pulmonary disease, with the request that I do what I could by remodelling the body so that the lungs could have a proper chance to regain their strength, and thus arrest the disease. Since in both of these cases the disease was active at the time the orthopedic treatment was started, special gymnastic work could not be undertaken in the beginning, and braces which held the body erect and the chest raised, had to be used until the lungs had so far recovered that active exercise was possible, these braces being discarded as soon as the muscles had gained sufficient strength. Our aim should be to make the full excursion of the chest in inspiration and expiration possible with the least effort. Much emphasis is put upon giving such patients plenty of fresh air, but it must be obvious that the air cannot get into the lungs in any considerable amount if the chest is allowed to remain, as is shown in Figs. 1, 3 and 6.

The importance of the posture should be borne in mind at all times, and particularly as the patients are put out in the open to "get the

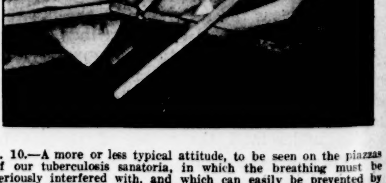

Fig. 10.—A more or less typical attitude, to be seen on the piazzas of our tuberculosis sanatoria, in which the breathing must be seriously interfered with, and which can easily be prevented by care in arranging pillows, stiffening the back of the seat, etc.

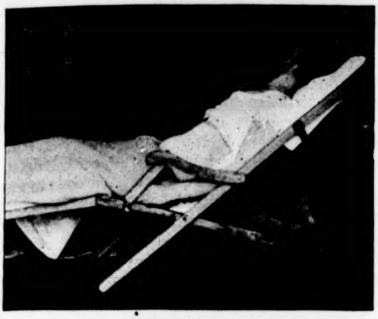

Fig. 11.—The same as Fig. 10, except that a board is placed on top of the canvas under the back of the patient. While this position is not ideal, the torso is relatively straight and the breathing comparatively little interfered with.

air." If propped up in bed, as in Fig. 6, obviously but little air can get inside the individual, and this is also true if some of the reclining chairs which are used at our sanatoria, especially the canvas steamer chair (Fig. 10) are allowed. The positions assumed in many of these must result in an increase in the mechanical difficulty under which the patient labors, with harm to the lung tissue rather than benefit. If such chairs must be used, the harmful features should be appreciated and corrected. With the canvas steamer chair the simple use of a board at the back placed on the canvas makes the chair much less objectionable (Fig. 11). If the bed position is to be used, naturally the position of Fig. 12 is better from the point of view of thoracic function than Fig. 6.

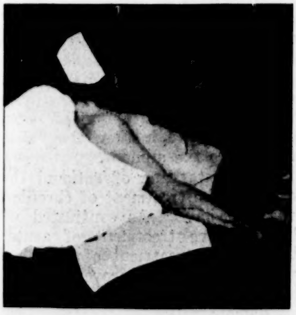

Fig. 12.—Half reclining position with pillows so placed that the torso of the body is relatively straight. To make this possible a large pillow under the knees to flex the thighs is necessary. The breathing in this position would be but little, if any, interfered with.

If these things are recognized and the harmful features are prevented by training in childhood, at which time the types can be easily recognized (Fig. 13), it seems not improbable that there will be less tuberculosis, because the vitality of the individuals of this type will be greater, and that when it does occur, its control will be more easy.

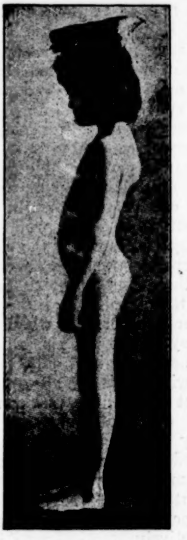

Fig. 13.—The slender congenital visceroptotic type as seen in childhood, showing at this early stage the same characteristic attitude with the flattened chest as is seen in the adult. This is the tuberculous type.

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THE TEACHING OF THERAPEUTICS AS A BRANCH OF APPLIED PHYSIOLOGY.*

By F. H. McCrudden, M.D., S.B., Boston,

Laboratory Director, Robert Brigham Hospital, Boston; Assistant Professor of Applied Therapeutics, Tufts Medical School.

The teaching of therapeutics is one of the weakest points in the training of the medical student. The actual details of treatment are taught incidentally to the other instruction in clinical medicine; and as the basis for such instruction the student is given a course in pharmacology dealing with the properties and action of drugs. But no systematic instruction is usually given in the *general principles* of therapeutics. The clinician says the course in pharmacology is not practical enough; the pharmacologist says the clinical instruction in therapeutics is not scientific. Both criticisms are wrong: so far as it goes, the instruction in therapeutics in both of these courses is usually good; but it is incomplete.

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* Part of an address read at the joint session of the Association of American Medical Colleges and the Federation of State Medical Boards, Chicago, Ill., Feb. 8, 1916.

In the course in clinical medicine the attention of the student is directed chiefly to symptomatology and diagnosis; treatment is relegated to a subordinate position with the emphasis on the details. This emphasis on the details is correct enough in such a course. A disease may take such variable forms in different persons, and change so much from day to day in any one person that the treatment of every new patient is a new problem. In chronic diseases especially, where the exact details of treatment depend largely on the severity of the disease, on the extent to which function is disturbed, on the condition of the patient as a whole—factors concerning which exact measurements play as yet but a small part, and for which judgment is gained only by long clinical experience with cases of all grades of severity—we treat individuals rather than diseases. The details of treatment can, therefore, be learned only by the inductive method—long-continued bedside observation of many patients under treatment—now used in teaching the subject. But back of the many details there are certain general principles which can be discussed deductively.

Pharmacology deals with only a part of these principles, and then not from the standpoint of therapeutics. It deals with the physiological action of substances, independently of their therapeutic effect; with the action not only of therapeutically useful substances, but also others—muscarin, curarin, and saponin, for example—whose action is chiefly harmful; and in the case of useful drugs, not only with the therapeutically important activities, but also those of no therapeutic significance. Pharmacology has developed to such an extent that it is now pursued as an independent science without reference to the practical needs of medicine in the same way, and with the same justification that anatomy, physiology, and chemistry—once a part of practical medicine—are now pursued as independent sciences; and books are written on pharmacology, instruction is given in the subject, and research is carried on by men who are not physicians. In actual practice drug treatment is combined with other forms of treatment—light, heat, cold, exercise, posture, diet, massage, electricity, x-rays, and high altitude—an intelligent application of which depends on a knowledge of physiology, physics, chemistry, psychology, and other factors—the personality of the physician even—as well as pharmacology. A knowledge of pathology and clinical medicine especially, though not necessary for the pharmacologist, is an absolutely necessary prerequisite for the study of therapeutics; the therapeutically important questions relating to the effect of pathological conditions in altering the effect of drug action and to diagnosis and prognosis, which have to be taken into consideration in deciding when and how to use drugs in disease, are outside the province of pharmacology.

A division of medical science dealing with the aims and methods of therapeutics and filling in the gap between physiology, chemistry, physics, pharmacology, and the other fundamental sciences which underlie the methods of treatment, on the one hand, and the actual details of treating individual patients from day to day, on the other, should be recognized; and a course in this subject should be added to the medical curriculum. The instruction should aim to give the student a point of view regarding these purposes and principles of treatment, so that these details may be contemplated, not as a vast number of empirical, and unrelated elements, but as mutually dependent parts of a whole; it should continue the emphasis on scientific habits of thought, which is one of the objects of instruction in physiology and the other fundamental branches of medical science, and bring out the fact that *therapeutics is not an empirical art, but an applied science.*

It is very important, too, to impress students early in their medical career with an optimistic and hopeful attitude toward the *results* of treatment. Since it is only through feeling confident of obtaining good results that the physician can carry out his treatment with enthusiasm, great attention should be paid to demonstrating that, under proper treatment, chronic disease has a hopeful outlook. Our optimism at the hospital, where my own course is given, is due not alone to the adoption of the physiological point of view regarding the purpose and principles of treatment, but also, in part, to the fact that we see the results of treatment *with the treatment properly carried out.* The less optimistic attitude of many physicians is due, not to the poor results of treatment, but to discouragement *at the difficulties of having treatment intelligently carried out in private practice*—a distinction that should be brought home to the student.

For an understanding of rational therapeutics a study of the treatment of chronic disease forms the best basis. As contrasted with the general supportive treatment of acute infectious disease, the treatment of chronic disease usually centers around improvement in the efficiency of some one organ or function; discussion and demonstration of treatment is, therefore, simpler. Changes due to the disease itself are less rapid than in acute disease, so that the effect of the treatment is more clearly discernible. The long duration of the disease makes possible a comparison of different forms of treatment in the same patient.

The treatment of chronic disease is very important. Only a small portion of the population suffers from acute disease at any one time; and the illness lasts but a short time—within a few weeks the patient is either well or dead.

But a large proportion of persons who have reached middle life suffer from some weakness of function, some handicap based on a physical defect—in its broadest sense some form of chronic disease; to adjust such persons to their handicapped condition, and thereby to maintain efficiency and comfort and to prolong life may require more or less constant medical attention.

The treatment of chronic disease is difficult. Compared with some of the clear indications for treatment in acute infectious disease—indications for diphtheria antitoxin, or for appendectomy, for example—the indications for treatment in chronic disease are lacking in precision. The severity of the disease, the degree to which functional efficiency is impaired—factors which determine the details of treatment—cannot usually be accurately measured; their estimation is subject to great errors of judgment; and estimations of the effect of treatment on such factors—on the degree of dyspnea, cyanosis, weakness on exertion in heart disease, for example—require not only skill and experience, but a certain amount of natural ability and aptitude. In the treatment of chronic disease, moreover, a broader view of all the circumstances of the case must be taken than in acute disease: facts concerning the patient's occupation and the state of the family and financial affairs may influence the treatment; for the few days during which they are sick, no matter what may be their family or financial responsibilities, all patients with such diseases as pneumonia or scarlet fever usually succeed in obtaining the same excellent treatment.

It may be objected that in presenting principles of treatment to students before they know much about the details of treatment, I am committing the very grave error of placing abstract ideas before concrete examples. The objection may be raised, too, that the subject of the purposes and principles of therapeutics is one of great controversy, that different physicians have different points of view.

As to the first objection: It is, of course, true that empirical experience should precede scientific conception; that educational advance should proceed from the concrete to the abstract. But this cannot be used as an objection to a course such as I have outlined; for I have discussed here only the *subject matter* of the course, not the *method of presentation;* in presenting the subject matter the instruction can be, and should be based upon and proceed from concrete examples af treatment.*

As to the controversies: The principles as laid down should not be taught as rigidly crystallized doctrine; the purpose should be not to inculcate dogma, but to enlighten the understanding and to stimulate the use of the intelligence in the application of treatment. Scientific education should consist not so much in the accumulation of facts, as in the development of scientific habits of thought; in the cultivation of correct points of view; in the establishment of a state of mind in which the facts can take their proper place. Some of the details of treatment, as laid down, may be of doubtful value, details that research is constantly modifying; so, too, elements of even greater moment, some tenets of the principles of treatment as stated, may exhibit faults and inconsistencies, or a distorted perspective in the emphasis laid on different parts. This is unavoidable. The details and facts must be used as the stuff out of which the ideas are formed; but they should not be taken for the idea itself. The physiological point of view regarding the purpose and principles of treatment* may be compared with a wave; though the actual physical particles of which the wave is composed change from instant to instant, the wave maintains its form and character. It may be compared with life itself—with a unicellular ameba, for example; the ameba is continuously changing its form, and the particles of which it is composed are constantly changing; but the living essence, the cell itself, remains. Under the influence of a correct point of view, facts arrange themselves in order, like iron filings under the influence of a magnet. The physiological point of view serves to bring system out of chaos; a statement of the facts of therapeutics, subordinated to certain guiding ideas, is to the disordered array of unrelated "remedies" and prescriptions, which the student commonly accumulates, what a disciplined army is to a mob of individuals. The point of view is simple, definite, and clear; and it is elastic enough to respond to the necessity of incorporating newly discovered elements of treatment. The chief guides in determining what principles to lay down should be *usefulness and elasticity*: the test of usefulness to restrain any tendency toward barren abstraction; that of elasticity to avoid the other extreme of fixed and rigid canon. As details become obsolete they can be replaced by better ones; but even though large parts of the scheme of treatment have to be altered to conform to the results of scientific progress, the idea itself—like the ameba or wave mentioned in comparison—will still remain as a paradigm.

Since students take up the study of medicine for the purpose of learning to treat sick patients, *such a course* as that which I have outlined *should be the most important in the curriculum.* The practical purpose of courses in pathology, physiology, diagnosis, and the other fundamental branches is to help in understanding the treatment of patients; and the details of therapeutics as demonstrated in the subsequent clinical courses are merely illustrations of the practical application of the principles of therapeutics.

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* For the details of such a course see my paper in the Boston Medical and Surgical Journal, Vol. clxxiii, p. 574, 1915.

* See F. H. McCrudden: The Treatment of Chronic Disease Is a Problem of Applied Physiology, Boston Medical and Surgical Journal, Vol. clxxv, July 13, 1916.

Clinical Department.

EXFOLIATIVE DERMATITIS FOLLOWING NEOSALVARSAN INJECTIONS.*

BY RENÉ BINE, M.D., SAN FRANCISCO, CAL.

SOON after the introduction of salvarsan and neosalvarsan in our therapeutic armamentarium, skin manifestations following their administration attracted considerable attention. Various degrees of erythema and dermatitis occurred with great frequency, but usually of such a degree, and of such short duration, as to arouse scientific interest rather than uneasiness. Many of these eruptions were found to be due to so-called "Wasserfehlers,"[1] while others were attributed to patients' idiosyncrasies.

Gennerich[1] states that other symptoms indicating hypersensitiveness to salvarsan, usually precede the severe skin lesions. He reports one case where these warnings being disregarded, severe toxic reactions, including a generalized dermatitis, resulted.

Swift's case,[2] a patient with leukoplakia, developed a severe vesicular dermatitis after his eighth treatment. He then was without treatment for eight months, at the end of which time a single intravenous injection of 0.3 gm. was accompanied by a sensation of pressure in the chest, followed in four hours by a generalized erythematous eruption which later became vesicular. Swift considered such reactions as due to anaphylaxis. They appeared only after repeated injections.

Gennerich[1] states that icterus is most apt to occur if one exceeds eight injections, or an amount of 4 gms. during an intensive cure. In addition to other toxic effects, the liver may be swollen and tender, the stools acholuric; the patient usually suffers from dyspepsia. Recovery occurs within three or four weeks.

Stuhmer[3] states that exanthemata following salvarsan usually appear after seven to twelve days, and that skin reactions were most often seen in those cases where the second or third dose came on the seventh or eighth day. He found that as soon as the eruption had disappeared, he could safely continue the treatment.

Kersten[4] reports a case of a Japanese prostitute, age 20, who because of a chancre, received 0.6 gm. 914 intramuscularly on Aug. 6, 1914. A second similar dose on Aug. 10, 1914. That night 39° C; felt ill, nausea. Inside of two days eruption involving mucous membranes, with edema of face. Skin soon became bluish in color, and later covered with vesicles. Mentality clouded. Inside of a week, practically well.

Wechselmann[5] believes that many of the eruptions attributed to salvarsan poisoning may be really due to the mercurial medication employed in most reported cases. On the other hand, A. Neisser has shown quite conclusively that severe, universal, exfoliative and eczematous erythemas may follow the use of salvarsan in cases where no mercury was ever prescribed.

Spence's[6] case presents such points of interest as to warrant an extensive report.

Male patient, age 25, contracted syphilis early in August, 1914, but had no treatment until October 31st, when he appeared with well developed secondaries, including a profuse maculopapular rash and mucous membrane lesions. Six weekly intramuscular 40% grey oil injections. Three weeks later, *i.e.*, **Jan.** 3rd, 1915, 0.6 gm. Billon intravenously. Severe headache next day. January 9, diffuse erythema. January 23rd, dermatitis with edema of face and extremities, pyrexia; consequently admitted to hospital where he remained nearly six months with a most pronounced and versatile general dermatitis, intense erysipelatoid erythema being first associated with vesicles, blebs, pustules and impetigenous areas about the hands, nostrils and lips, and then a copious and prolonged desquamation. Concurrently developed severe nasopharyngeal inflammation, mucopurulent conjunctivitis, weakness, emaciation. Every vestige of hair, finger and toe-nails shed. No gastro-intestinal, renal or nerve involvement. Was home in bed for two months more. Ten months after injection, head still showed a few small patches of cicatricial alopecia and a great thinning of hair. Nails had all returned. Marked pigmentation and slight brawny desquamation still seen; moderate keratosis palms and soles.

In the discussion, following Spence's report, Mr. McDonagh said that he considered this case a typical instance of the form of arsenical poisoning seen on using French and English substitution products for "606" and "914." He had seen nine similar cases, two of which had ended fatally. In no case had more than two injections been given, and in some only one. In one case the dermititis did not appear for nine weeks after the injection. Before the war he had seen only one case of exfoliative dermatitis following the use of salvarsan.

The following case, presenting many unusual features and questions of practical interest, is reported in detail.

Miss X., stenographer, age 19. First seen June 1st, 1915.

Family History. Mother died one year ago of some acute psychosis. Father living, quite nervous. One sister and one brother alive and well, also several maternal uncles and aunts. No syphilis in family so far as can be elicited.

Past History. Measles and chicken-pox in childhood. Pneumonia as a baby. No scarlet; no typhoid; no malaria.

Present History. February, 1915, an eruption appeared all over the body, including face. Felt perfectly well; had no fever, and if it were not that the eruption appeared on the face, would not have consulted a physician. The eruption was very intense; there was marked swelling of the lower extremities which were intensely red, and pitted on pressure. Had no sore throat. Dr. Y., the family physician, thought that she had scarlet fever, and kept her in bed one week, but the course of the disease obliged him to abandon this diagnosis When the eruption had entirely disappeared, a Wassermann test was done; the report was ++.

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* Read before the San Francisco County Medical Society, April 4, 1916.

Dr. Y., therefore, informed the patient that the rash was probably syphilitic, but that he was puzzled because of the absence of any primary sore, or possible source of infection. He prescribed mercury pills, of which she took twelve daily from that time up to the present date. In the meantime the patient's family physician died; on that account she consulted the writer. (Not wishing to worry her relatives, Dr. Y. and Miss X. kept them in ignorance of her disease.)

Physical examination revealed no abnormality; no skin lesions; no mucous patches; no anemia; no fever; no signs of involvement of organs of special sense; no bone or nerve lesions; no adenopathy; hymen intact; urine O.K.

Diagnosis. In the absence of any signs of syphilis and realizing that errors in Wassermann interpretations occur, as well as in view of the fact that scarlet fever at times gives a positive Wassermann reaction, we felt that it was absolutely necessary to repeat the test before proceeding with any treatment.[8, 9] The patient was informed that if the Wassermann test was reported negative, it would be necessary to repeat it at a later date, as she had, as before mentioned, taken considerable mercury.

June 8th, 1915. Wassermann was reported +++. We were obliged to assume the correctness of Dr. Y.'s diagnosis, and to treat the patient accordingly. Because of her occupation, and of her desire to keep her illness secret, it was decided to give her mercury injections, and, as soon as her work would permit, to give her some injections of neosalvarsan.

June 15th, 1915. One c.c. of 10% mercury salicylate intramuscularly; this was followed by considerable abdominal pain.

June 28th, 1915. Mercacodol 2 c.c. intramuscularly.

July 6th, 1915. Neosalvarsan 0.9 intravenously; no after effects.

July 8th, 1915. Mercacodol 2½ c.c. intramuscularly.

July 12th, 1915. Neosalvarsan 0.9 intravenously.

July 13th, 1915. Patient phones that she had severe headache, otherwise happy and at work.

July 16th, 1915. Patient feels miserable, at times chilly, at times warm; feels bilious and thinks a physic would do her good. This morning noticed a slight eruption on her forearm. She had gone walking in the hills July 12, and had been exposed to poison ivy to which she was subject; she thinks that this accounts for the eruption.

Examination. Hands are markedly tremulous. There is an eruption composed of small, reddish macules, on the flexor surface of both forearms. No eruption on rest of body. Temperature 101.8. Throat, negative.

Treatment. Aspirin 0.3, to be taken every four hours. A dose of salts to be taken immediately.

July 19th, 1915. Patient states that her eyes have been very much injected and reddened during the last few days, and that a marked eruption had appeared on her arms and legs. Eyes today are considerably better and the eruption has gone.

Examination. Except for very faint macular eruption on the arms, nothing found.

July 26th, 1915. Feeling perfectly well. Wants treatment continued.

Treatment. Mercury salicylate 10%, 1 c.c. intramuscularly.

August 8th, 1915. Patient complains of an itching eruption all over the body. She says that it is exactly the same sort of a rash as the one she had when she first consulted Dr. Y. Feels tired and depressed.

Examination. There is a scarlatiniform eruption over entire body, most marked, however, over arms and legs. Here, in spots, skin is infiltrated and raised. Conjunctivae edematous; face quite swollen and covered with eruption. Legs swollen; patient can hardly get into shoes. No swelling of mucous membrane of mouth. Urine negative.

Treatment. ℞. Salol 4.0; divide in pulv. No. 12. Sig: 1 every four hours. To remain in bed on milk diet.

August 12th, 1915. Patient does not feel at all ill, but the skin of face, as well as rest of body, so swollen as to disfigure her beyond recognition and deprive her of desire of even leaving room.

Examination. Diffuse erythematous eruption over the entire body; marked edema involving particularly the face, so that the eyes are almost closed. Legs markedly swollen and reddened, eruption here being definitely purpuric. Legs pit on pressure. Abdomen slightly distended; liver easily felt about 4 or 5 cms. below right costal margin; edge not tender. Spleen: moderately soft; easily palpable on deep inspiration. Temperature and pulse normal. Conjunctivae icteric. Skin has yellowish hue which can be recognized in spite of intense rash. Urine: traces of albumin; trace of bile; few hyaline casts. Stools: clay colored.

Examination. August 14th, 1915. Purpuric eruption covers legs. On close examination one can see minute hemorrhages in skin wherever involved. Eruption most marked over upper and lower extremities; trunk of scarlet red color, through which one can see yellowish tinge of jaundice. On neck are small spots, about the size of a nickel, where desquamation has begun.

On back of heel is a very large desquamating area. Slight but offensive yellowish oozing all over trunk and face. Considerable vaginal discharge.

August 16th, 1915. Marked desquamation over entire body; over posterior surface of legs, skin coming off in great big pieces. Jaundice still quite distinct. Stools a bit darker and urine lighter in color.

August 18th, 1915. Urine still contains bile. Stool markedly clay colored.

August 24th, 1915. Patient still worried about her condition, but outside of that feels perfectly well.

Examination. Still disfigured beyond recognition. Face swollen; eyes still closed, jaundice still present.

September 4th, 1915. Face is drying; oozing of yellowish serum is less, but skin is getting cracked, particularly around lips and eyes. Skin is under marked tension, so that the eyes are kept wide open, and patient has difficulty in seeing.

Treatment. Boracic ointment to be applied over face, in form of a mask. Also compound cathartic pills to be taken, one at bedtime.

September 28th, 1915. Hair has been coming out quite considerably.

Examination. Quite bald over front part of head; hair is very thin even over back of head. Arms great deal better but face still covered with scales; the legs still of a deep purple.

October 1st, 1915. Hair has all come out. Complains of vaginal discharge. Smears made from latter show numerous pus cells and a few gram negative cocci and diplococci; no intracellular organisms.

January 11th, 1916. Hair has begun to grow; is about one inch to one and a half inches in length; and quite thick, but light in color. Face still somewhat puffy. Legs distinctly purpuric. Hard edge of spleen easily palpable.

March 20th, 1916. Wassermann: faintly positive.

1. What was the nature of the eruption, which led the patient to consult her physician? From her description, it must have been of a scarlatiniform type. Unfortunately the dead physician's records are not available. He told her, however that the original infection must have occurred a few weeks before the rash,—this in spite of the absence of signs of primary lesions. Late secondary syphilides are not unknown, but the intense cutaneous reaction, the deep color, and rapid evolution of the eruption are certainly against its having been luetic. The Wassermann reactions deserve consideration, especially as the first two were triple positive, the last one only being but faintly positive. Is the presence of a positive Wassermann, proof of an active syphilis demanding treatment? Have we reached a stage where we are to treat a positive Wassermann, or should we still confine our efforts to treating a patient, leaving otherwise clinically healthy persons alone. We know how unreliable Wassermann reports may be. We nevertheless believe that in most instances an absolutely positive Wassermann reaction indicates the presence of living spirochetes in the organism, and that we are justified in diagnosing syphilis whether symptoms are or are not present, and whether there is or is not a history of infection.[10]

2. What caused the purpura, jaundice, big liver and big spleen which manifested themselves twelve days after an injection of mercury, twenty-seven days after a second dose of neosalvarsan? The neosalvarsan was given in two relatively large doses, at a six-day interval. In addition to a relative overdose, and even assuming a possible idiosyncrasy to the drug, could such reactions be due directly to neosalvarsan poisoning? (Spence's case is perhaps the only one on record, which can be at all compared to ours.)

The larger part of the injected drug reaches the liver, which is, therefore, subjected to its action. Of this action we know nothing except by clinical results, and we cannot explain why some injections are followed by light subicteric coloring of the conjunctivae and skin, others by well marked jaundice with symptoms from other organs as well. These conditions have, however, been observed, where relative or absolute overdoses have been injected, or where the liver itself was previously diseased, thus rendering it easily affected by small doses.[11]

In our cases we must conclude, that while the patient's original eruption may have been syphilitic, the weight of evidence is apparently against such a diagnosis, and rather suggests a general exfoliative dermatitis.

We certainly cannot consider the eruption a late manifestation of congenital lues, there being no signs of such trouble. To explain the positive Wassermann on this basis, does not seem justifiable, the family history apparently excluding this. The patient's brother was the only member, however, whose blood could be tested, and here the Wassermann was absolutely negative.

We must further conclude that while the skin lesions following the administration of the neosalvarsan may have been due to arsenic poisoning, they bore sufficient resemblance to the first eruption as to warrant assuming a common etiology. As to the nature of the latter, we do not feel justified in drawing conclusions.

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A REVIEW OF 127 CLINICAL CASES OF ATAXIC PARAPLEGIA.*

By G. H. Bigelow, Boston.

[From the Neurological Clinic, Massachusetts General Hospital.]

From 1903 to November, 1915, the out-patient records at the Massachusetts General Hospital show that the diagnosis "ataxic paraplegia" has been made 127 times. Of these, 70% were males, whereas in the whole Out Patient Department, approximately 58% are males.

In 83 cases we established a possible etiology, though some, perhaps, on rather meagre evidence. They were: syphilis 43, following accident 10, following acute infections 6 (diarrhea, grippe, rheumatic fever, typhoid, infectious arthritis, and meningitis), hemiplegia 5 (which suggested hypertension with possible hemorrhage, etc.), alcoholism 5, malformations or irregularities of the spine 3, hypertension (at time of examination) 3, chronic disease 2 (gout and sepsis), exhaustion 2, anemia, lead poisoning, neurotic family history, exposure, heredity, tumor and pellagra, each one. In 44 cases no possible etiology could be found.

Of the 43 syphilitic cases only 7 showed positive laboratory findings in the blood (3 cases), or spinal fluid (2 cases), or both (2 cases). Two were strongly positive, one moderately, and one weakly positive, while three were reported "positive" without any qualification. One case was considered positive in spite of negative laboratory findings because of the marked improvement with salvarsan. Eight gave a history of syphilis; 6 showed it clinically, that is, there were scars and pupils; 18 were syphilitic clinically and also by history; while 2 showed it clinically and therapeutically, *i.e.* improved under anti-specific treatment. One was diagnosed in the House, spinal syphilis in spite of negative laboratory findings on the basis of symptoms and irregular pupils. Thus it would seem that syphilis as an etiological factor in ataxic paraplegia is, of course, far less constant than in tabes, and when present is less frank, giving moderately positive or negative laboratory findings.

This is quite contrary to the statements in the literature. Gowers[1] says, "A history of syphilis is as rare in ataxic paraplegia as it is common in locomotor ataxia." Dana[2] agrees with this. Osler[3] denies the relationship to syphilis except in rare instances. Putnam[4] finds the indications of syphilis exceedingly rare, if not wholly absent.

Here is the history in brief of one of the typical cases:

William S., age 36, seen first in October, 1903, complaining of weakness of the legs, of insidious onset, which the patient dates from a fall on the ice six years before. Feet feel as if walking on felt. Difficulty in walking in the dark. Severe frontal headaches for the past two months. Physical examination shows impaired muscle sense, otherwise negative. A year later unequal and irregular pupils were noted. In 1910 examinations showed increased knee-jerks, positive Babinski and clonus, urinary incontinence and a spastic gait. Dr. Baldwin notes that it is a typical case of spastic paraplegia. In 1914 two blood Wassermanns were done and both were positive. Last November besides the signs mentioned above, he showed a positive Romberg. His ataxia was so great that he was forced to use crutches. There was subjective numbness as high as the crests of the ilia. Pain and temperature sense were normal, but light touch was impaired. The urinary incontinence had improved. His arms were unaffected. Before the days of the Wassermann this case would without doubt have been considered of traumatic origin.

The complaints given at the first visit were tabulated. Of the 127 cases, 112 or 88.3% complained of objective or subjective disturbances of the legs. Of the other 11.7%, the primary complaint was in some cases urinary disturbances, in others paresthesia or weakness of the arms, dizziness, headache, etc. It is because of this preponderance of leg complaints, undoubtedly, that 50% of the cases not admitted directly to the Nerve Room, were sent to the Orthopedic.

The predominant symptoms were also tabulated. Those showing principally spasticity were 52, ataxia 49, paresthesia 9, bladder symptoms 3, flaccidity 3. In 11 cases the notes were so meagre that it was impossible to determine.

The treatment was enormously varied. It included mercury, salvarsan, K I, Zander, electricity, massage, Fowler's solution, iron, brace, jacket, Thomas heel, advice, urotropin, and "stop lead." In each case the etiological factor, when discovered, was attacked; otherwise the treatment was symptomatic.

As to the course of the disease, only 71 cases returned often enough for any conclusions to be drawn. Of these 25 were better, 18 were worse, and 27 practically stationary. One patient was entirely cured, according to the record, but the notes are so meagre that the diagnosis may well be questioned.

In conclusion it seems from the analysis of these cases that syphilis is an important etiological factor in ataxic paraplegia.

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* Read at a meeting of the Boylston Medical Society, Feb. 4, 1916.

Book Reviews.

Artificial Feeding of Infants. A Technique for the Calculating of Percentages and Values in the Artificial Feeding of Infants. By MERRICK LINCOLN, M.D., Assistant Visiting Physician to Memorial Hospital, Worcester, Mass., assisted by GEORGE CHANDLER LINCOLN, M.D., Assistant Visiting Obstetrician to Memorial Hospital, Worcester, Mass. Worcester, Mass.: The Davis Press. 1916.

This little pamphlet, which can easily be carried in the waistcoat pocket, contains an immense amount of information culled from text-books and periodicals. We know of no place in which so much has been collected in so small a space. It is truly a *multum in parvo.* It contains tables showing the analyses of milk and cream, the percentage requirements of babies of various ages, the composition of various foods, both non-proprietary and proprietary, as well as many others. It gives methods for the modification of milk and for the calculation of the calorie value and composition of food mixtures, as well as many other valuable data. It is intended, as the author states, rather for the pediatrist than for the beginner or the busy practitioner who wishes a short cut. It should prove of value, however, to everyone who will take a little trouble to become acquainted with the rudiments of infant feeding before he attempts to use it. Our only criticism is that the methods of calculation advocated seem to us unnecessarily long and complicated.

Diseases of the Skin. By HENRY H. HAZEN, A.B., M.D. Two hundred and thirty-three illustrations, including four color plates. St. Louis: C. V. Mosby Company. 1915.

Text-books on Dermatology by American writers have been appearing with bewildering frequency of late. One reason for this increase may be found in the perfecting of modern photography and processes of reproduction, as it is easily possible nowadays to produce a book filled with graphic and accurate representations of cutaneous conditions such as were unknown to the earlier writers. Dr. Hazen says in his preface that his apology for adding another book to the existing collection is, that in his opinion, there is at present no book altogether suitable for either the student or general practitioner, as he regards the large works as too voluminous, while the small books he characterizes as "rather exaggerated quiz compendiums," not sufficiently comprehensive. His attempt has been to describe fully the common diseases, accompanied by illustrations of their histopathology in many instances. A short introduction by Dr. Gilchrist emphasizes Dr. Hazen's claims to fitness for his task. The book is clearly written, and a judicious amount of space, in relation to the size of the volume, seems to have been given to each topic. The illustrations are very good and very instructive.

Surgical Operations with Local Anesthesia. Second Edition. By ARTHUR E. HERTZLER, A.M., M.D., Ph.D., F.A.C.S., Surgeon to the Halstead Hospital, Kan.; the Swedish Hospital, Kansas City, Mo.; and to the General Hospital, Kansas City, Mo. New York: Surgery Publishing Company. 1916.

Four years ago, Hertzler published his first edition. The present volume is one-third larger than the first, and more profusely illustrated, containing about three hundred pages and an equal number of good pictures. The simpler operations were considered in the first volume, but the present work includes most of the major operations. It is true that the technique of producing safe and satisfactory anesthesia is described with far greater detail than is bestowed upon the operative procedures as such, but this is perhaps fair, when the scope and title of the book are considered. The author repeatedly and rightly emphasizes the fundamental importance of a careful and thoroughly developed technique; with the drugs now at our disposal, it is the surgeon's fault if the anesthesia is not complete. But an adequate technique in this as well as in other procedures can be acquired only by study and patient practice. The book is again recommended to students and surgeons.

Twelve Lectures on the Modern Treatment of Gonorrhea in the Male. By P. ASCH, M.D., (STRASSBURG). Translated and Annotated by FAXTON E. GARDNER, M.D., Lecturer and Assistant Visiting Genito-Urinary Surgeon, New York Polyclinic; Assistant Genito-Urinary Surgeon, Bellevue Hospital, Out-Patient Department, New York City. New York: Rebman Company. 1915.

This book is not in the least like most small compendiums of knowledge, which it resembles in size and appearance. It consists of twelve short concise lectures on the "Treatment of Gonorrhea in the Male," and it embodies the author's personal briefs and experience, well translated into English. The paper and type are good and the few illustrative sketches are adequate for their purpose.

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ERNEST GREGORY, *Manager,*
126 Massachusetts Ave., Corner Boylston St., Boston, Massachusetts.

THE NEW YORK POLIOMYELITIS EPIDEMIC.

THE epidemic of poliomyelitis, whose progress we have noted in previous issues of the JOURNAL, has assumed serious proportions, and at the present writing shows little or no evidence of abatement. The report from New York, on July 13, states that there had been 1557 cases and 311 deaths since the outbreak of the epidemic. These figures show a continuance of the relatively high death rate (over 20%) which has characterized the disease in this outbreak.

Not the least serious aspect of this epidemic is the likelihood, indeed almost the inevitability, not only of its persistence, even in controlled form, throughout the summer in New York, but of its diffusion to other parts of the country. The disease originally appeared in poorer and more crowded quarters of the city, but has extended to other localities; and many of the more well-to-do residents of the city have taken their children away as refugees. Such migration is almost certain to spread the infection, in addition to other possibilities of its dissemination.

Already many cases have appeared in other communities, though it is by no means certain that these are instances of direct transference of infection. There are at present fourteen cases in Massachusetts, of which three are known to have come from New York. The distribution of these cases is as follows: three in Fall River, two each in Pittsfield, Westfield, New Bedford and Worcester, and one each in Lowell, Lawrence and Haverhill. One death from the disease has occurred at North Adams. No cases of the disease have yet been reported in Boston. In New England, cases have been reported in Vermont, Rhode Island, and Connecticut, but none as yet in Maine or New Hampshire. Eleven cases have occurred in Rhode Island with one death, and two cases in Connecticut. There has been only one case in Vermont.

In other parts of the United States the disease has made sporadic appearance. There are 82 cases in New York State outside of New York City, two cases in Philadelphia, 27 cases in Illinois, with one death in Chicago, one case and one death in Baltimore, two cases in Indiana, three in Minneapolis, one in Nebraska, six cases and one death in Wisconsin, and six cases and one death in Newark, N. J. Five cases were also reported in Montreal on July 7.

In New York, and in all other affected communities, drastic measures for the control of the epidemic have been taken. Of these, almost the most important is the immediate reporting and isolation of suspected cases, and this is a duty which falls primarily upon general practitioners. As a guide to them in dealing with the disease, the Boston Health Department has issued to physicians in this city the following circular letter of instruction, which should be studied and observed by physicians throughout the State:

"The present outbreak of anterior poliomyelitis or infantile paralysis in New York City has brought this disease prominently before the public. Fortunately Boston has no cases of this disease at the present time, and thus far this year but one case has been reported.

"Infantile paralysis is an acute infectious disease, and is to be feared, not only on account of the great danger to life, but because in many cases where a patient survives it leaves him disabled for life. Permanent paralysis or greatly impaired functions of the arms and legs are the most common results.

"This disease attacks people of all ages, but the greatest incidence is always among children, especially those in the first half decade of life. Children under five years of age furnish usually from 50 to 90% of the cases of poliomyelitis. In some epidemics the disease is almost as prevalent in children between the ages of five and fifteen years as in those under five, but adults, constituting usually about half of the population, seldom furnish more than 10% of the cases, and usually this percentage is smaller. In children under five, the greatest number of cases and deaths occur in those between one and two years of age.

"Strong and healthy children are attacked with as much frequency as weak children, and it does not confine itself to either the rich or the poor.

"Anterior poliomyelits has been epidemic on both eastern and western hemispheres, in torrid as well as frigid zones, in thinly-settled, remote country districts as well as the thickly-congested sections of our large cities; and, contrary to usual epidemics, it does not necessarily follow the direct routes of travel. During the last epidemic in New York it spread to northern New England, but it did not attack the people in the large cities to the west and south of New York, reached by countless thousands daily, or by the most direct routes of travel. It has been found that the spread of this disease is rapid, but is irregular in its course, and in country districts, where the population is sparse and oftentimes separated by distances, it attacks a greater percentage of the population than in the congested sections of cities. Poliomyelitis usually makes its advent in May and continues until August.

"Boston has been unusually clear of this disease, and whereas in epidemics the mortality reaches about 25%, the percentage has been very low in this city.

"The virus has been found in the tissues and secretions of persons who have died from poliomyelitis and in the secretions of persons acutely ill with the disease, and there are three sources of infection: 1. From those ill with the disease. 2. From those convalescing. 3. From 'passive carriers.'

"The virus in the body exists in the discharges from the nose and throat, and also in the intestinal discharges of those who are ill, and is received into the body through the mucous membrane of the nose and throat. Therefore, kissing, coughing, and sneezing may carry the secretions of nose and throat from the sick to the well. Infected nasal discharges are probably the most common vehicle of spreading the infection. Persons harboring the disease germs, but showing no symptoms of the disease, may be the cause of its spreading.

"With these facts before us it is the earnest hope of the officials of the Health Department that epidemic infantile paralysis will not strike here. However, preparations have been made, and the department is ready for any emergency. At the present time the Health Department especially desires your coöperation and assistance for the care and control of this disease. By reporting immediately all cases that come to your attention, with the history of the children coming recently to this city from an infected area, and reporting all suspicious cases that may be called to your attention, this threatened outbreak may be averted.

"The office (Fort Hill 5100) is open from 9 a.m. to 11 p.m., Sundays and holidays included, for the report of contacts and cases. Telephone charges may be reversed.

"F. X. MAHONEY, M.D.,
"Health Commissioner."

As a further aid to physicians in reviewing for prompt recognition the symptoms of the disease, the JOURNAL is publishing in another column of this issue a special article by Dr. Francis R. Fraser of New York on the symptomatology and diagnosis of the disease in its acute stages. This article is especially recommended to the medical profession for attentive perusal.

By way of treatment, Dr. Beverly Robinson of New York has suggested the exhibition of ammonium salicylate, which he believes to have a bactericidal value.

The especial attention of physicians is also called to the recently published (July, 1916) number of the *American Journal of Orthopedic Surgery*, which is issued as a symposium on infantile paralysis. In a series of expert papers, this symposium discusses the later surgical treatment of the complications and sequelae of the disease which, during the period succeeding so violent and extensive an epidemic as the present, are certain to be seen in considerably increased numbers.

It is earnestly to be hoped that by the intelligent and alert coöperation of every practitioner of medicine, the suppression of the lamentable epidemic now in progress may be speedily secured and its extension into new fields prevented.

AMERICAN COMMITTEE FOR MEDICAL PREPAREDNESS.

In another column of this issue of the Journal we take pleasure in publishing a communication from Dr. Horace B. Arnold on "The Unpreparedness of the Medical Profession." The facts which he points out relative to the status of our profession as regards its readiness for war service are extremely pertinent and significant. That they have not escaped the realization of others, and that steps have already been taken to remove some of the defects of our professional organization for this purpose, is evidenced by the work already accomplished by the advisory committee of civilian American physicians and surgeons on medical preparedness.

This committee was jointly appointed in the spring of 1916 by the presidents of the American Medical Association, the American Surgical Association, the Congress of American Physicians and Surgeons, the Clinical Congress of Surgeons of North America and the American College of Surgeons. Its personnel was as follows:

William J. Mayo, Chairman, Rochester, Minn.; Frank F. Simpson, Secretary, Pittsburg, Pa.; Frank Billings, Chicago; John F. Binnie, Kansas City, Mo.; Joseph C. Bloodgood, Baltimore; George E. Brewer, New York City; George W. Crile, Cleveland; J. M. T. Finney, Baltimore; Charles L. Gibson, New York City; Robert G. LeConte, Philadelphia; Fred B. Lund, Boston; Edward Martin, Philadelphia; Franklin H. Martin, Chicago; Rudolph Matas, New Orleans; Charles H. Mayo, Rochester, Minn.; Lewis S. McMurtry, Louisville, Ky.; John B. Murphy, Chicago; Robert E. Noble, Washington; Albert J. Ochsner, Chicago; Charles A. Porter, Boston; Charles A. L. Reed, Cincinnati; Emmet Rixford, San Francisco; Hubert A. Royster, Raleigh, N. C.; George E. de Schweinitz, Philadelphia; Henry Sewall, Denver; Richard P. Strong, Cambridge, Mass.; William S. Thayer, Baltimore; Albert Vander Veer, Albany, N. Y.; Victor C. Vaughan, Ann Arbor, Mich.

The committee organized in Chicago on April 14, elected officers and an executive committee, which on April 26 met in Washington and presented to President Wilson the following memorandum.

"We, the undersigned, acting as a committee of the medical profession appointed by the joint action of the presidents of five national societies, to wit: the American Medical Association, the American Surgical Association, the Congress of American Physicians and Surgeons, the Clinical Congress of Surgeons of North America, and the American College of Surgeons (having an aggregate membership approximating 70,000 medical men), have the honor to present our greetings and to tender to the Federal Government our services toward the medical welfare of the Army and Navy, being prompted to do so by the following considerations:

1. In times of peace as well as in times of war, the medical profession has always held itself in readiness, out of a spirit of patriotism and coöperation, to serve the best interests of the Federal Government.
2. The European war, especially during the first six months, demonstrated a greater need both of medical supplies and of more efficient organization of medical resources, in connection with military and naval activities, than was formerly deemed adequate or necessary.
3. Every soldier and sailor in the service of the Federal Government is entitled at all times to protection in sanitary matters, and to proficient medical and surgical care.

Prompted, therefore, by these considerations, this committee respectfully offers its services in coöperation with the existing medical agencies of the government. Among the services for which at this time the committee specifically tender their coöperation, in conjunction with existing facilities of the Army and Navy for such purposes, are:

1. To establish, through the membership of the above-named medical organizations and their affiliations with local medical societies of the states and territories, an organization that would be in a position to make a comprehensive survey of the medical resources of the country.
2. To make a complete invoice of such resources available in peace and in the emergency of war. This invoice would include not only the names of men available for field or home duty who are trained in the specialties of medicine, surgery, and sanitation, but it would also include in minute detail for each community the equipment of the institutions with which these men are connected, such as hospital facilities, buildings available for hospital use, facilities for transporting wounded men, food supply and drug supply on hand and available, lists of trained nurses and other persons essential for hospital work, etc.
3. To aid in the care of the sick and wounded and the elimination of preventable diseases.

We would respectfully submit that thorough organization of the national civilian and reserve medical resources is of primary importance in the proper preparedness of the country.

For the accomplishment of these ends we desire unreservedly to offer our services."

This offer of service was accepted by the President. The committee completed its organization by adding to its numbers as honorary members the surgeons general of the three national medical services and a half dozen associate members, among whom may be noted Dr. Eugene H. Smith, dean of the Harvard Dental School. Subordinate committees have also been appointed in every state, the Massachusetts committee consisting of the following members:

John B. Blake, Chairman, Boston; Samuel B. Woodward, Worcester; Walter L. Burrage, Boston; Lincoln Davis, Boston; Homer Gage, Worcester; Robert B. Greenough, Boston; Roger I. Lee, Cambridge; Robert W. Lovett, Boston; R. H. Seelye, Springfield.

The immediate duties which the committee purposes specifically to undertake, are the following:

> A. To aid the Medical Department of the United States Army and Navy by making a comprehensive inventory of the especial qualifications of individual civilian physicians throughout the country.
>
> "B. To coöperate with the National Committee of the American Red Cross, in bringing that organization up to the highest standards of medical ideals and to aid in the organization of Red Cross units throughout the country.
>
> "C. The activities of the near future will include a very practical inventory of all civilian medical resources.
>
> "D. Research work and careful investigation along many lines relating to the subject of efficient medical preparedness."

The first report of the committee was issued in Chicago on June 30. Its first step is the selection in various parts of the country of 21,000 physicians who, it is estimated, should be sufficient to care for an army of 3,000,000 men, on the European basis of 7 physicians for each 1000 enlisted men. The plan calls for the selection of physicians by each state on the ratio of 200 physicians to each million of population. To further this end, the committee will endeavor to interest the profession in the desirability of applying for commissions in the medical reserve.

> "By a mutual understanding between the National Committee of American Physicians for Medical Preparedness and the National Committee of the American Red Cross, and by an interlocking arrangement of National, State and Local Committees, the former organization has determined to coöperate with the Red Cross in raising its civilian and military work to the highest point of efficiency and in organizing a considerable number of Red Cross Hospital units, in strict accord with the most recent advances and the highest ideals of medicine. By a Presidential proclamation dated August 22, 1911, the Red Cross was made, substantially, an agency for the organization of a reserve for the medical services of the army and navy, and the units organized by it pass, in time of war, into the medical service of the military forces."

* * *

NATIONAL BOARD OF MEDICAL EXAMINERS.

The obvious desirability of a standard medical examining body for the entire United States and its territories, led, in 1915, to the foundation by the late Dr. W. L. Rodman, then president of the American Medical Association, of the National Board of Medical Examiners, a voluntary organization whose members were selected from the medical corps of the United States Army, Navy and Public Health Service, from the Federation of State Examining Boards, from other medical organizations and from representative physicians throughout the country.

The Board, as originally constituted, consisted of the following fifteen members:

Surgeon-General W. C. Braisted, U. S. N., President.
Dr. W. L. Rodman, Secretary.
Colonel Louis A. LaGarde, U. S. A., Ret., Treasurer.
Surgeon-General W. C. Gorgas, U. S. A.
Surgeon-General Rupert Blue, U. S. P. H. S.
Medical Director E. R. Stitt, U. S. N.
Assistant Surgeon-General W. C. Rucker, U. S. P. H. S.
Dr. Herbert Harlan, Federation of State Medical Examining Boards.
Dr. Isadore Dyer, New Orleans, La.
Dr. Victor C. Vaughan, Ann Arbor, Mich.
Dr. Henry Sewall, Denver, Col.
Dr. Louis B. Wilson, Rochester, Minn.
Dr. E. Wyllys Andrews, Chicago, Ill.
Dr. Horace D. Arnold, Boston, Mass.
Dr. Austin Flint, New York, N. Y.

Upon the death of Dr. W. L. Rodman on March 8, 1916, Dr. W. L. Bierring of Des Moines, Ia., was, on June 13, elected to the Board and Dr. J. S. Rodman has since succeeded to the office of secretary. It is intended that the permanent organization of the Board shall consist of the three surgeons general, of one representative from each of the government services, of three representatives from the state examining boards and of six members chosen at large from the profession by the National Board of Medical Examiners. The headquarters of the Board is to be at Washington, D. C.

The purpose of the National Board of Medical Examiners of the United States is to establish a standard of examination and certification of graduates in medicine through which, by the coöperation of individual boards of medical examiners, the recipients of certificates of the National Board of Medical Examiners may be recognized for licensure to practice medicine. The policy of the Board is to conduct its examinations on a broad scientific basis of such a high, yet practicable, standard that the holders of its certificates will receive universal recognition. The independence of the Board is furthered by the financial and moral support of the Carnegie Foundation.

The first examination to be held by this Board will begin at the Army Medical Museum, Washington, D. C., on October 16, 1916, and will cover a period of one week. No charge will be made for the examination, but a registration fee of $5.00 is required. Further particulars may be obtained from the secretary, Dr. J. S. Rodman, 2106 Walnut Street, Philadelphia.

The requirements for admission to this examination are the satisfactory completion of a four-year high school course; two years of acceptable college work, including physics, chemistry, biology and one modern language; graduation from a medical school of Class A in the American Medical Association classification; and a year spent as interne in an acceptable hospital or laboratory. The examinations will be conducted primarily by members of the Board and will be written, oral and practical. Examinations will also be held at the Army and Navy Medical School and at the Hygienic Laboratory of the Public Health Service. The examination will cover the following subjects which will be numerically rated as follows:

1. Anatomy	100
2. Physiology	75
3. Chemistry and Physics	75
4. Pathology and Bacteriology	100
5. Materia Medica, Pharmacology, and Therapeutics	75
6. Medicine	200
7. Surgery	200
8. Obstetrics and Gynecology	100
9. Hygiene and Sanitation	50
10. Medical jurisprudence	25
Total	1000

An average of 75% is required as a passing grade and any candidate who receives a mark below 50% in one subject, or below 65% in two subjects, fails. Candidates failing at the first examination may register for the second examination at the end of the year, but a third examination will not be allowed. Candidates who have been successful and are approved by the Board will be granted certificates, which are not licenses to practice medicine and will not exempt the holders from complying with the legal requirements of the states in which they desire to practice. These certificates, however, will be evidence of high attainment in medical knowledge and it is believed that they will soon be accepted by state boards of registration as evidence for licensure without further examination.

The formation of the National Board of Medical Examiners and the plans for its work represent an attempt to accomplish unofficially the standardization of medical registration throughout the United States which has so long been needed and desired by enlightened practitioners. The movement has already received the endorsement of the American Medical Association and numerous other medical organizations. It is sincerely to be hoped and expected that the successful work of this board may soon win permanent recognition and result in the elimination of the duplicated effort and anomalous diversity of standards resulting from present methods of state examination.

MEDICAL NOTES.

The History of a Typhoid Carrier.—The daily press thus chronicles the history of a typhoid carrier in New York State: "The carrier, Mr. C—, is fifty-five, has a dairy farm in X—, and his milk is sold by others in his city. About sixteen years ago he had typhoid fever, has been in good health ever since and does the work on his farm, including milking, assisted by his son and family.

"At various times suspicion pointed to this milk supply, but nothing definite could be proved against it. In 1913 a new health officer was appointed. He followed up each typhoid outbreak and found always four to six dairy farms, C—'s among them, and tests were made among these every time. In 1914 an outbreak was traced to ice cream—milk from C—, but it was thought that the water in which the cans were washed was contaminated. In 1915 an outbreak was defined as possibly due to a few farms, C—'s among them, and tests were made of all the dealers. Delay in examining the specimens caused the tests to be worthless. C— was warned not to sell milk in N—. Later in 1915 another outbreak occurred, traced to milk of a dealer, P—. There was no trouble on his farm, but it was found that his own supply being short, he was quietly getting about eighty quarts a day from C—. C— was again tested and found to be a carrier. Meanwhile the water supply had been treated and many other possible causes discussed.

"It is an interesting story, showing how insidious the typhoid bacillus is and how the health officer must be a detective as well as a sanitarian."

American Academy of Medicine.—At the annual meeting of the American Academy of Medicine in Detroit, Mich., on June 12, the following officers were elected for the ensuing year: President, Dr. Jacob E. Tuckerman, Cleveland; vice-presidents, Dr. Frederick L. Van Sickle, Olyphant, Pa., and Dr. Ray Connor, Detroit, and secretary, Dr. Thomas W. Grayson, Pittsburg.

Prevention of Fourth of July Fatalities. It is now over ten years since the beginning of the movement for the so-called safe and sane observation of the Fourth of July, a movement whose progress has been largely aided by the influence of the *Journal of the American Medical Association*, especially in the matter of the prevention of tetanus. The following statistics are the best evidence of the success of this movement. In the year 1899 there were twenty-one deaths in New York City from tetanus following pistol and firecracker injuries. In 1903 there were in the entire United States 415 cases of such injuries. In 1905 the total number of cases was reduced to 104, but of these 87 died. In 1906 there were 89 cases and 75 deaths, of which 10 were in New York City. In 1909 the number of cases rose again to 150 with 126 deaths, of which 7 were in New York City. Since that time the number of cases and deaths has rapidly declined. In 1914 there were only 3 cases, all of which, however, proved fatal, and in 1915 there were 3 cases and 1 death. This rapid decline represents the diffusion, not only among the public but among the profession, of knowledge about the danger of blank cartridge and firecracker wounds, the best method of their treatment, and the possibility of preventing the development of tetanus from such injuries.

Medicine in China.—As significant of the present status of medical education in China, the daily press reports as follows a recent conference of the National Medical Association of China, the president of which is F. C. Yen, M.D., of Changsha:

"There were 55 delegates in attendance at this meeting in Shanghai, representing sections separated by about 1200 miles along the country adjacent to the coast from Canton and Hong Kong north to Mukden and Kirin. The Chinese army and navy were also represented.

"In view of the general Western ignorance of the China of today, it is interesting to note that the plaint of Dr. Wu Lieu-Teh was the absence of compulsory notification of infectious fevers, and he urged the more thorough adoption of new and progressive ideas. Some of the titles of papers suggest that the Chinese are considering the questions of the day in much the same way as do the Caucasians and with intelligence and knowledge. The 'Medical Education of Nurses' was discussed by Dr. Lujien Tsao of Nanking, a woman graduate of Philadelphia medical schools; while Dr. S. P. Chen urged the reorganization of the medical schools of the country. He proposed the establishment of a central board of control, the reörganization of existing schools, provision for post-graduate study and the equipment of hospitals throughout the country. 'Health as a Factor in National Strength' was the timely title of a paper presented by Dr. Peter, secretary of a Chinese public health council."

An Important Legal Decision.—Before Judge William I. Grubb in a United States court recently, a jury determined that novocaine as a synthetic product does not come within the prohibitory provisions of the Harrison Anti-Narcotic Law, inasmuch as it is not a derivative or compound of opium or coca leaves. This decision was rendered in a suit of protest brought by a drug company to recover the tax which had been paid under a ruling of the treasury department.

EUROPEAN WAR NOTES.

Appeal of American Relief Committee.—The American Relief Committee, auxiliary to the American Relief Committee in Berlin for Widows and Orphans of the War, has recently issued the following appeal for funds for the continuation of its work. The honorary chairman of this committee is His Excellency, Charles S. Whitman, Governor of New York, and the honorary vice-chairman, His Honor, John Purroy Mitchel, the Mayor of New York City. The chairman is the Honorable George B. McClellan, former mayor of New York, and the treasurer, to whom all contributions should be sent, is John B. Crimmins, Esq., 30 East 42d street, New York. Among the leading members of the committee are Nicholas Murray Butler of New York, President of Columbia University, Henry S. Pritchett of New York, President of the Carnegie Foundation, Mr. Henry W. Taft of New York and the Honorable Charlemagne Tower of Philadelphia. The appeal of this committee is as follows:

"Ever since the outbreak of the war when it became evident that the great struggle was to impose immeasurable suffering upon all nations, Americans living in Berlin have been trying to do what they could to alleviate the situation. An American Relief Kitchen, organized by the American Chamber of Commerce, with Mrs. James W. Gerard as president, was opened, and distribution of food was daily made to hundreds of those in immediate want. At the same time coal and clothing were given as freely as circumstances permitted. The Kitchen was entirely non-partisan and made no distinctions as to nationality.

"This and other endeavors to minister to the all-prevailing misery have been highly appreciated in Germany, and there have been warm expressions of gratitude from many sources. But with the unlooked for proportions to which the war has grown, all ordinary relief methods have broken down, while the demand for help has become more urgent than ever. The number of persons requiring assistance, the constantly multiplying appeals of widows and orphans have brought about a condition calling for redoubled efforts.

"Americans in Berlin have given freely and without stint; but their resources, already straitened by the interruption of commerce incident to the war, have been nearly exhausted. The Relief Kitchen, after nine months of noble work, has been forced to close its doors on account of lack of funds, and that at the very time when its activities were most essential. Indeed, all humane exertions which resident Americans have felt called upon to undertake are in danger of extinction.

"Rather than let this all-important work go by default and thus allow America, so active elsewhere, to appear to neglect the call of humanity in this one field, the American Relief Committee in Berlin for Widows and Orphans of the War, under the patronage of Hon. James W. Gerard, the American Ambassador, and Her Highness, the Princess of Hohenlohe, has been formed and has appealed to their fellow-citizens at home to assist them.

"The American Auxiliary Committee has come forward in response to this appeal, and hopes to raise a substantial sum, which will be forwarded without deductions of any kind to the American Relief Committee in Berlin, and expended by the Red Cross of Berlin in their relief work among widows and orphans of the war.

"Necessary clerical expenditures already have been provided for by the members of the Committee.

"The Committee cannot handle food and clothing; but money not only will relieve in some measure the very real suffering of non-combatants, but will also prove to the German people, so long friendly to America, that America, on her part, is willing to give of her plenty, wherever humanity demands."

WAR RELIEF FUNDS.—On July 14 the totals of the principal New England relief funds for the European War reached the following amounts:

Belgian Fund	$133,945.12
Allied Fund	123,912.00
French Wounded Fund	99,146,80
Army Huts Fund	66,739.60
French Orphanage Fund	57,397.05
Armenian Fund	54,832.77
Polish Fund	39,052.37
Facial Hospital Fund	23,135.51
Italian Fund	20,592.34
Permanent Blind Fund	1,003.70

MEXICAN NOTES.

BASE HOSPITALS AT THE FRONT.—Report from San Antonio, Texas, on June 30, states that two large base hospitals capable of caring for 500 patients each have been established in that city and at Fort Bliss. A smaller base hospital has also been established at Douglas, Ariz., and there are to be others at Fort Crockett, Galveston, Eagle Pass, Laredo and Nogales. Numerous camp hospitals have been established along the frontier.

FIELD HOSPITALS AND AMBULANCE COMPANIES.—There are at present in the United States Army seven field hospitals and seven ambulance companies. Steps have already been taken by the Government to equip each field hospital with a motor truck and all field ambulance companies with motor ambulances.

BROWNSVILLE MILITARY HOSPITAL.—Report from Brownsville, Texas, on June 27, states that funds are being raised for the enlargement and maintenance of the Brownsville Military Hospital. The National Red Cross has given $1000 and Major Henry L. Higginson of Boston $10,000 for this purpose. When completed the hospital is to contain 300 beds.

SECOND MASSACHUSETTS FIELD HOSPITAL COMPANY.—The first Massachusetts Field Hospital Company is already at the front with the mobilized Massachusetts Militia. A second field hospital and ambulance company has been organized by Dr. Charles R. Morgan of Boston, who will be its captain, with Dr. W. H. Young and Dr. H. F. Parker as lieutenants. This company has an enrollment of 67 men, six officers and nine members of the quartermaster's department. Its members have already taken the Federal oath, been inspected and gone to Framingham for encampment prior to departure for Mexico. Dr. Morgan served with the medical department of the United States Navy during the Boxer uprising in China in 1900 and in the Philippines in 1901 and 1902. He served for a time as assistant surgeon in the navy and for three years has been first lieutenant in the medical corps of the Massachusetts National Guards.

SANITARY ORGANIZATION OF THE ARMY.—Report from Washington, D.C., on July 3, states that Lieutenant Colonel Edward L. Munson and Majors R. B. Miller and William N. Bispham of the United States Army Medical Corps have left that city for San Antonio, Texas, to assume charge of the sanitary organization in connection with the National Guard camp at the front. It is also announced that the United States War Department will furnish sanitary equipment to all National Guard organizations, including material for ambulance companies and field hospitals. The Department will purchase four hundred motor ambulances and large quantities of bedding and other hospital supplies. New medical supply depots have been established at El Paso and San Antonio. Existing hospitals have been enlarged and additional accommodations will be built. Orders have been placed for 200,000 mosquito bars, and it is intended that every militia soldier who has not already been vaccinated against smallpox and typhoid shall be compelled to receive this protection.

MASSACHUSETTS DENTAL CORPS.—Adjutant General Cole of Massachusetts has called attention to the desirability of organizing and sending to El Paso, for service with the Massachusetts militia, a dental corps to consist of six qualified dentists. It is expected that the Governor will issue the necessary authorization for the establishment of such a corps.

MASSACHUSETTS MEXICAN RELIEF FUND.—Two funds have already been initiated in Massachusetts to relieve the stress incident to the Mexican situation. The first is that of the Massachusetts Volunteer Aid Association, whose purpose is to relieve distress among the families of Massachusetts soldiers, and to furnish supplies of relief to the soldiers themselves. On July 14 the total of this fund amounted to $66,897.50. The other fund is that of the Special Aid Society for American Preparedness, which on the same date reached a total of $9,423.40.

On July 10 the Massachusetts Volunteer Aid Association issued the following second appeal for contributions to its fund:

"On June 26, Governor McCall summoned to the council chamber certain citizens, men and women of our State, and requested them to organize the Massachusetts Volunteer Aid Association for the purpose of helping the women and children of the men called to military service by the President of the United States, who receive no adequate assistance from their employers, and to assist these men in every needed way.

"The committee of citizens summoned has organized as directed and has taken up the work with diligence and zeal. Everyone has been invited to become a member of the Association by subscribing $1 or more and the committee is now engaged in giving help, acting only after the most careful inquiry.

"Subscriptions, large and small, have been invited, and some money has been raised, but not nearly enough to carry on the work which has proven to be necessary. As many families are actually without food and money, subscriptions are needed immediately.

"So long as our men are in service, war or no war, many of their families need help, and the committee asks our citizens to send their subscriptions at once to George C. Lee, treasurer, 50 State street, Boston.

"HENRY L. HIGGINSON,
"DANIEL G. WING,
"WILLIAM A. GASTON,
"PHILIP STOCKTON,
"AUGUSTUS P. LORING,
"WILMOT R. EVANS,
"HENRY PARKMAN,
"W. CAMERON FORBES,
"JAMES M. PRENDERGAST,
"W. MURRAY CRANE,
"FRANK G. WEBSTER,
"A. C. RATSHESKY,
"Finance Committee."

BASE HOSPITAL AT THE MAYO CLINIC.—On July 10, it was announced that Colonel Jefferson R. Kean of the United States Army Medical Corps, Director General of military relief of the American Red Cross, had received at the American Red Cross Headquarters in Washington, a letter from Dr. William J. Mayo of Rochester, Minn., offering to organize a base hospital whose personnel and equipment should be furnished by the Mayo Clinic. The number of medical officers in this hospital would be 23, the number of beds would be 500, and the estimated cost of equipment, $25,000.

MASSACHUSETTS BASE HOSPITALS.—The Massachusetts branch of the American Red Cross has announced its intention of raising funds to provide full war equipment for the three base hospital units to be established at the Boston City, Massachusetts General and Peter Bent Brigham hospitals in this city. A committee has been appointed and has issued an appeal for the sum of $200,000 for this purpose. In addition, a fourth base hospital is to be established in western Massachusetts, for which further subscriptions of $50,000 are requested by another committee from that part of the State. On July 14 a total of $67,922.00 had already been raised towards the former sum. Each of the four base hospitals thus provided is to be equipped with five hundred beds and four motor ambulances, and each will have a total complement of 196 physicians, surgeons and attendants. In addition, the committee purposes to establish an ambulance corps as an adjunct to each hospital, at a cost of $30,000, and, in the event of war, a hospital train costing $15,000 to bring troops from the front. A hospital ship is another possibility under consideration.

Massachusetts Field Hospital Fund.—The following extract from a recent letter to a Boston physician by a lieutenant of the Massachusetts Field Hospital Company, No. 1, now on service in Camp at Fort Bliss, El Paso, Texas, is self-explanatory:—

> "Do you think you could get the Massachusetts Medical Society interested enough in us to give us a little aid? We are suffering for want of transportation facilities. We have no horses, but expect to become motorized at some time,—when, I don't know. We have been promised by some Back Bay ladies a portable kitchen and a motor ambulance. What we most need now is a couple of motor-cycles with sidecars, to get about quickly and run errands with. As we are so far from town, hours are wasted in getting about on a car service crippled by a strike now going on. I ask you, thinking perhaps you could start something to help us."

In accordance with this appeal, and after conference with officers of the Massachusetts Medical Society, it is purposed to establish a fund to purchase the needed equipment. Contributions to this fund, from physicians and others, are earnestly solicited, and should be sent to Dr. Samuel B. Woodward, 58 Pearl Street, Worcester, or to Dr. Paul Thorndike, 14 Marlborough Street, Boston.

BOSTON AND NEW ENGLAND.

The Week's Death Rate in Boston.—During the week ending July 15, 1916, there were 199 deaths reported, with a rate of 13.65 per 1000 population, as compared with 197 and a rate of 13.69 for the corresponding week of last year. There were 31 deaths under 1 year, as compared with 35 last year; and 53 deaths over 60 years of age, against 53 last year.

During the week the number of cases of principal reportable diseases were: diphtheria, 35; scarlet fever, 10; measles, 165; whooping cough, 20; typhoid fever, 4; tuberculosis, 45.

Included in the above were the following cases of non-residents: diphtheria, 10; scarlet fever, 3; typhoid fever, 1; measles, 2; tuberculosis, 3.

Total deaths from these diseases were: diphtheria 1; measles, 5; tuberculosis, 21; whooping cough, 1.

Included in the above were the following deaths of non-residents: diphtheria, 1; tuberculosis, 2.

Dental Clinic at Boston Dispensary.—On Monday of last week, July 10, a new dental clinic was opened at the Boston Dispensary in charge of Dr. Kurt H. Thoma of the Harvard Dental School. Nominal fees are charged to cover the cost of material and of administration. The clinic is to be held on Monday and Friday at 7 P. M.

Boston Baby Hygiene Association.—On July 6, the Boston Baby Hygiene Association issued a statement of its work during the preceding month and half-year. During the first six months of the year 3370 babies were under supervision by the Association, and over 2000 of these were under care in the month of June, an increase of 113 over June, 1913. Contributions to the sum of $300 have been received towards the opening of a new station at Grove Hall. Seventeen nurses are now employed by the Association, and an extra nurse is maintained at the South Station by the Federation of Women's Clubs. Dr. J. Herbert Young, director of the Association, announces the appointment of the following conferent physicians:

Dr. Edwin A Meserve, Dr. N. M. Scott, Dr. Jeremiah A. Green and Dr. A. B. Lyon.

Hospital Bequest.—The will of the late Marion C. Goodwin, filed recently at the Probate Office, contained a bequest of $500 to the Children's Hospital, Boston.

Miscellany.

RÉSUMÉ OF COMMUNICABLE DISEASES FOR MAY, 1916.

The outstanding features of the communicable disease situation for May are the unusually high mortality from measles, the low incidence of typhoid fever, and the sharp outbreak of septic sore throat in Watertown.

Prevalence. The total number of cases of communicable diseases reported for May is about the same as for the corresponding month last year. It is considerably above the five-year average for the month of May. The case incidence per hundred thousand population for May, 1916, was 218, while the average for the five-year period (1910-1914) was 190. This increase above the average is due to the unusual prevalence of measles and the better reporting of whooping cough. Measles continue to be the most important single factor in our communicable disease reports. It is prevalent in every part of the state.

Distribution. The distribution of the various communicable diseases is of interest.

Measles. Springfield and Brockton remain the centers of greatest intensity in this infection. However, during May the following cities and towns have exceeded their endemic index. (Endemic index signifies the average for five years of reported cases exclusive of epidemics. This index is applied to each city and town for each month for every communicable disease.)

The numbers in the first column indicate the endemic index for that city or town. The numbers in the second column indicate the cases reported during the current month.

	Endemic Index.	Current Year.
Abington	2	43
Adams	0	31
Amesbury	1	12
Attleboro	1	79
Avon	0	37
Bridgewater	4	44
Brockton	39	451
Carver	0	14
Chatham	0	12
Chelmsford	0	22
Chicopee	7	58
Clinton	2	43
Duxbury	0	16
E. Bridgewater	1	34
Erving	0	32
Essex	1	9
Fall River	11	42
Fitchburg	16	55
Framingham	24	37
Hanson	0	15
Hanover	0	22
Hardwick	0	23
Holbrook	1	16
Lowell	105	182
Ludlow	0	28
Lynn	21	42
Mansfield	2	14
Marshfield	0	44
Mendon	0	42
Methuen	2	16
Montague	1	12
Needham	0	11
Newton	81	168
Palmer	1	12
Rockland	0	42
Rockport	0	9
Shirley	0	13
Springfield	46	405
Tyngsboro	0	21
Ware	0	14
Wareham	0	28
Warren	0	35
Westfield	9	21
Whitman	2	35
Worcester	90	331

Scarlet Fever shows a decrease in amount both in comparison with May, 1915, and with the average for the five-year period. The most important focus of infection seems to be at Quincy. From the investigations of the State District Health Officer, the disease appears to be being spread by mild and ambulant cases. The following cities and towns have exceeded their scarlet fever endemic index for the month of May:

	Endemic Index.	Current Year.
Amesbury	1	8
Bridgewater	1	7
Cambridge	11	21
Clinton	1	8
Dalton	0	9
E. Longmeadow	1	8
Holyoke	14	40
Lexington	0	6
Milton	1	12
Newburyport	1	6
North Adams	0	7
Northampton	4	12
Peabody	1	11
Quincy	8	42

Whooping Cough has shown a slight increase in the number of reported cases as compared with May, 1915. The considerable increase noted, as compared with the five-year period, is doubtless due to the better reporting of this disease. The following cities and towns have exceeded their whooping cough endemic index for May:

	Endemic Index.	Current Year.
Amesbury	0	7
Braintree	5	26
Brockton	7	66
Cambridge	9	45
Canton	1	9
Chelsea	2	14
Danvers	0	14
Dudley	0	24
Fall River	3	26
Fitchburg	2	21
Haverhill	4	23
Lawrence	12	21
Lexington	0	10
Medford	3	13
Wellesley	0	35

Diphtheria shows a gratifying decrease in amount. The case incidence per hundred thousand is considerably lower as compared with May, 1915, and also as compared with the five-year period. There are at the present time no important foci of diphtheritic infection in the state. However, the following cities and towns have exceeded their endemic index for diphtheria for the month of May:

	Endemic Index.	Current Year.
Amesbury	1	7
Brockton	9	26
Everett	4	10
Fitchburg	4	15
Lawrence	9	27
Oxford	0	7
West Springfield	0	5

Tuberculosis. The looked-for increase in the number of reported cases of this disease through the newly-established dispensaries is disappointing. During May there was a decrease in the number of reported cases, both in comparison with the same month last year and with the five-year period. It had been hoped that with the dispensaries in good working order that we would be getting fuller reports of cases. The subject is now being taken up through the State District Health Officers.

Typhoid Fever. A remarkably low incidence of typhoid fever is to be noted. Reports for the month show a decreased incidence, both in comparison with May, 1915, and with the five-year period. It is also to be noted that the fatality rate for this disease more nearly approached normal during last month.

Mortality. As usual, the most important single factor in the month's mortality is tuberculosis. The most striking factor, however, is the fact that there were 40 deaths from measles during the month. These deaths were distributed as follows: Boston 12, Brockton 7, Worcester 7, Springfield 4, Chicopee 2, Fall River 2, and 1 each from Attleboro, Cambridge, Lawrence, Lynn, New Bedford and Woburn. This is a striking commentary on the generally accepted belief that measles is not a "dangerous disease." Diphtheria, with 39 deaths, is a striking feature, even though it is below the average. We do not appear to be making satisfactory progress in controlling the mortality from this disease. Scarlet fever and whooping cough combined to cause 32 deaths, while typhoid fever was given but eight times as a cause of death.

Epidemics. During the course of the month there was a sharp outbreak of what proved to be septic sore throat in Watertown. Physicians of that town were sending to the local board of health laboratory cultures for a severe type of sore throat. The early diagnosis was that of a staphylococcic infection; later developments have proved that it was a hemolytic streptococcus. Investigations showed that all of the families were taking milk from the same milkman. An inspection of the dairies on this producer's route revealed a single cow with an atrophied quarter from which was obtained a small amount of pus. A special bacteriological examination is under way upon orders from the local board of health. The cow was slaughtered; the entire milk supply has been pasteurized.

Three additional cases of anthrax were reported from Woburn during the month. All the cases reported to date have been handlers of Chinese hides.

The diphtheria situation at the Shirley Industrial School for Boys is improved. There have been no clinical cases for some time, and the few remaining boys with positive cultures are isolated in a camp remote from the rest of the school.

Rare Diseases. Trachoma was reported from Boston (4), Brookline (1) and Lowell (1). Cerebro-spinal meningitis was reported from Boston (3), Methuen (2), Walpole (2), Arlington (1), Ipswich (1), Northampton (1), Somerville (1) and Springfield (1). Malaria was reported from Boston (3), Marblehead (1) and Worcester (1). Pellagra was reported from Worcester (2), Boston (1), Northampton (1), Taunton (1) and Winchester (1). Septic sore throat was reported from Boston (7), Fall River (4), Somerville (3), Chelsea (1), Chicopee (1), and Westfield (1). Dog-bite was reported from Boston (12), Brockton (7), Worcester (7), Springfield (4), Chicopee (2), Fall River (2), and one case each from Attleboro, Cambridge, Lawrence, Lynn, New Bedford and Woburn.

Correspondence.

THE "UNPREPAREDNESS" OF THE MEDICAL PROFESSION.

Boston, July 7, 1916.

Mr. Editor:

In the Journal of July 6, in an editorial on "Medical Aspects of the Mexican Situation," you make the following statement:—

> "The occasion and opportunity have arrived when the medical corps of the army and navy, the medical officers of the national guard, and *in the event of extensive hostilities*, civilian members of the profession will either demonstrate or fail to demonstrate their fitness to deal competently and creditably with the medical urgencies that arise in time of war; and it is most earnestly to be hoped *and expected that this demonstration will be in every respect a credit to the American profession.*" (The italics are mine.)

The natural pride which you take in the medical profession has led to a statement which, in my opinion, is not justified. Let us look a few unpleasant facts in the face.

I believe that, *in the event of extensive hostilities*, at the present time the medical corps of the army and navy and of the national guard would be found entirely inadequate in numbers, and that the civilian members of the profession would be unable to acquit themselves in such a way that the profession should be proud of them. I know that they would all acquit themselves with great credit in one sense—in their earnest endeavor to accomplish the impossible; but the accomplished results would hardly be creditable.

In the same number of the Journal, page 32, under the head of "Deficiencies of the Medical Service," you call attention to the fact that "On a war footing of 1600 men, each regiment has but four surgeons, who, under conditions of field service in war, are obviously insufficient. In all foreign countries the allowed ratio is seven surgeons to 1000 men." Yet the European War has shown that the allowance of surgeons abroad—almost double that in this country—has proved inadequate to meet the demands of modern warfare. The inadequate number of our surgeons is not the fault of the medical corps of the army and navy, but of the Congresses that have refused to make proper provision for the medical care of our soldiers.

If we needed any proof of the inadequate number of medical officers provided for the army, it is to be found in the recent mobilization of the militia. The medical officers have been overtaxed with the duties of mustering in 100,000 men from the militia. What would happen *"in the event of extensive hostilities,"* when we would need in addition a volunteer army of 500,000 or 1,000,000 men?

In such an event they must, of course, turn to the civilian members of the profession,—but how many of us know anything about the duties of medical officers? And there would be no available army officers to teach us. This fact has been brought home to me by the present difficulties of the Harvard Graduate School of Medicine in trying to give the course in military medicine which is announced for July.

Recognizing the importance of preparedness on the part of the medical profession, the Graduate School decided last November to inaugurate instruction in military medicine. Major Chamberlain, of the medical corps of the army, was selected by Surgeon General Gorgas to give this instruction, but he could not be sent to Boston until July. All plans were completed for a course of daily lectures to begin July 5, when, at the last moment, it was found that Major Chamberlain could not be spared from the army at the Mexican border. Fortunately, we had already received his typewritten lectures, and it was thought that some other medical officer of the army could be found to deliver these lectures. Enquiry showed, however, that *not a single officer of the medical corps of the army or of the militia could be spared for this purpose,*—so overwhelmed are they by the duties of mobilization and recruiting.

Let us ask ourselves seriously, if we are interested in having the medical profession acquit itself creditably "*in the event of extensive hostilities,*" what would have happened if the United States had found itself suddenly confronted with a war with a first-class power instead of with a possible war with Mexico. Unless the medical profession could creditably meet such an emergency, it is not "prepared" as it ought to be.

It is probable that through typhoid inoculation we should make a better record in one respect than we did in the Spanish-American War, but are we any better prepared in other respects? The medical profession cannot be proud of its record in that war. The records show officially that the incidence of typhoid fever was 88 per thousand, but a board of investigation, consisting of Reed, Vaughan and Shakespeare, came to the conclusion that the rate should have been stated as 192 instead of 88 per thousand. Compare this with the record in the Civil War of 62 per thousand,—and let the profession hang its head in shame for its unpreparedness for military duty in 1898. Are we civilians essentially better prepared in 1916? My answer is "No."

I believe it is the duty of medical schools to include military medicine in the curriculum, that it is the duty of graduate medical schools to organize courses in this subject for members of the profession, and that it is the duty of all physicians in civil life, who might be needed in the emergency of war, to learn at least the rudiments of the duties of a medical officer.

The Harvard Graduate School of Medicine began its course July 5, as announced, and will give a creditable course in military medicine in spite of the handicaps. It will offer similar instruction on a more extensive scale next fall.

Yours very truly,
H. D. ARNOLD.

SICKNESS SURVEY OF BOSTON.

BOSTON, July 8, 1916.

Mr. Editor:

For the week beginning July 17 there is to be made, by the Metropolitan Life Insurance Company, a "sickness survey" of Boston; like the survey made in Rochester a while ago.

There can be no question of the desirability of the exact knowledge of morbidity to be gained in this way, and while Dr. Frankl is running the affair, some coöperation by the profession will help. This need only take the form of answering inquiries as to diagnosis in doubtful cases, in reply to letters of inquiry that will come through Dr. Mahoney of the Health Board.

The profession may rest assured that this survey is intended only to get knowledge of actual conditions, —very essential these days, in view of the probably impending sickness insurance laws, in shaping which medical men must do their share, if they wish for a proper status and proper treatment when such laws become effective.

Very truly yours,
FREDERIC J. COTTON, M.D.

RESIGNATIONS.

PROFESSOR SELSKAR M. GUNN has resigned as director of the Division of Hygiene of the Massachusetts State Department of Health.

DR. EMERY R. HAYHURST has resigned as chief of the Division of Occupational Diseases of the State Department of Health of Ohio.

NOTICES.

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, for the week ending July 1, 1916.

June 24.

Surgeon H. C. Curl, *Alabama* to *Rhode Island.*

Surgeon J. S. Taylor, *Rhode Island* to *Alabama.*

June 26.

F. C. Cook, detached *Louisiana* to home and wait orders.

Surgeon T. W. Richards, to Military Relief Division, American Red Cross, Washington, D. C.

June 28.

Surgeon A. W. Dunbar, detached Naval Academy, Annapolis, Md., to home and wait orders.

June 30.

Assistant Surgeon C. H. Dragoo, to Naval Hospital, Newport, R. I.

NOTE: Medical Director S. F. Coues, retired, died at Cambridge, Mass., May 1, 1916.

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, for the week ending July 8, 1916.

Cable from Commander-in-Chief Asiatic Fleet, June 29, 1916.

P. A. Surgeon M. A. Stuart, detached *Wilmington* to home and wait orders.

Assistant Surgeon Talmadge Wilson, detached Naval Hospital, Yokohama, Japan, to *Wilmington.*

BELGIAN PHYSICIANS' RELIEF FUND.

REPORT OF THE TREASURER OF THE COMMITTEE OF AMERICAN PHYSICIANS FOR THE AID OF THE BELGIAN PROFESSION FOR THE MONTH OF JUNE, 1916.

No contributions for the month of June, 1916.

Previously reported receipts........	$7941.86
Previously reported disbursements:	
1625 standard boxes of food at $2.20—	$3575.00
1274 standard boxes of food at 2.30..	2930.20
353 standard boxes of food at 2.28..	804.84
Total disbursements	$7310.04
Balance	$ 631.82

F. F. SIMPSON, M.D., *Treasurer,*
7048 Jenkins Arcade Bldg.,
Pittsburg, Pa.

RECENT DEATHS.

DR. FREDERICK W. K. VON ILBERG, a laryngologist who for some years has had expert care of the German Emperor, died in Berlin on July 9.